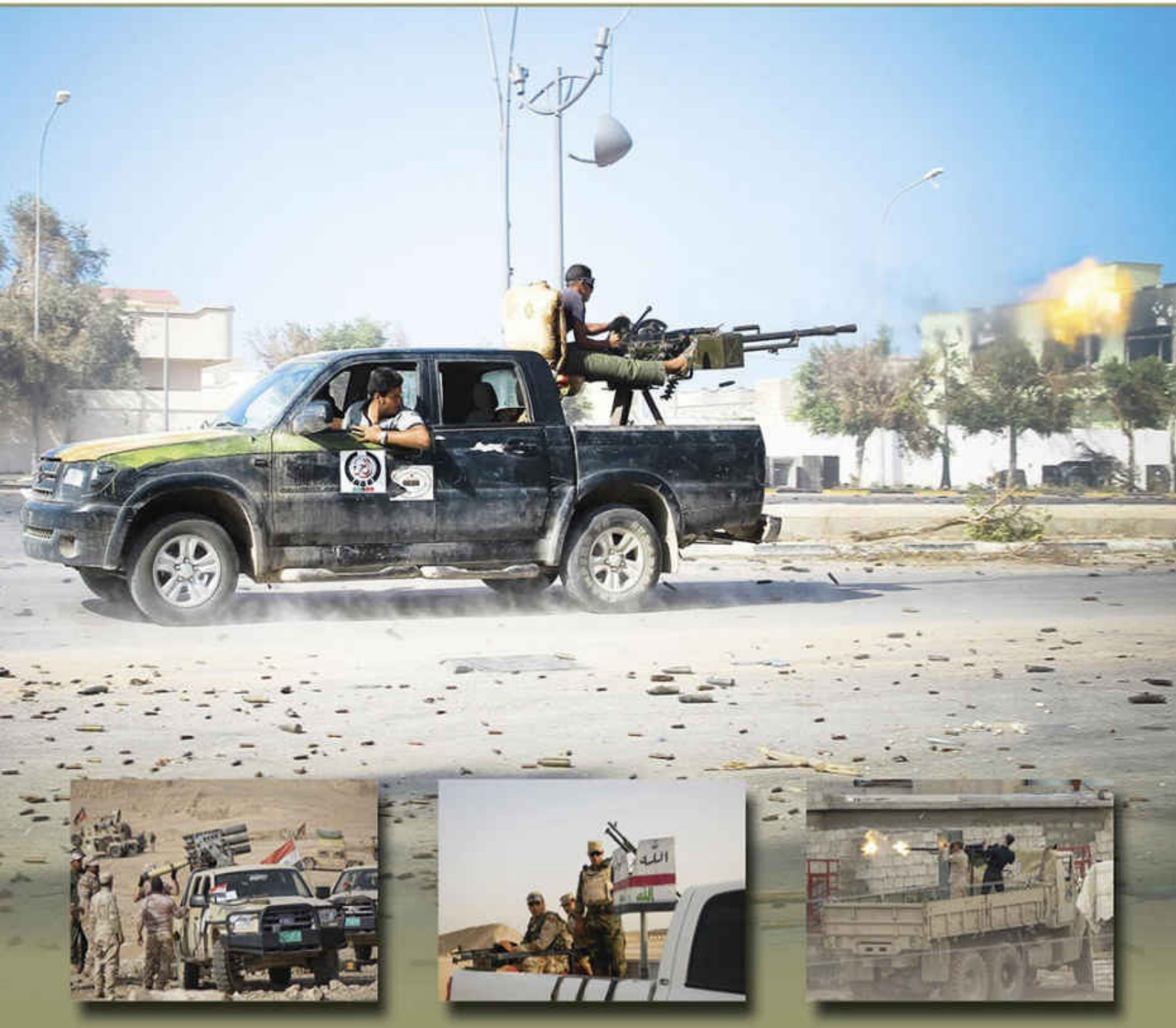
TECHNICALS

Non-Standard Tactical Vehicles from the Great Toyota War to modern Special Forces



LEIGH NEVILLE

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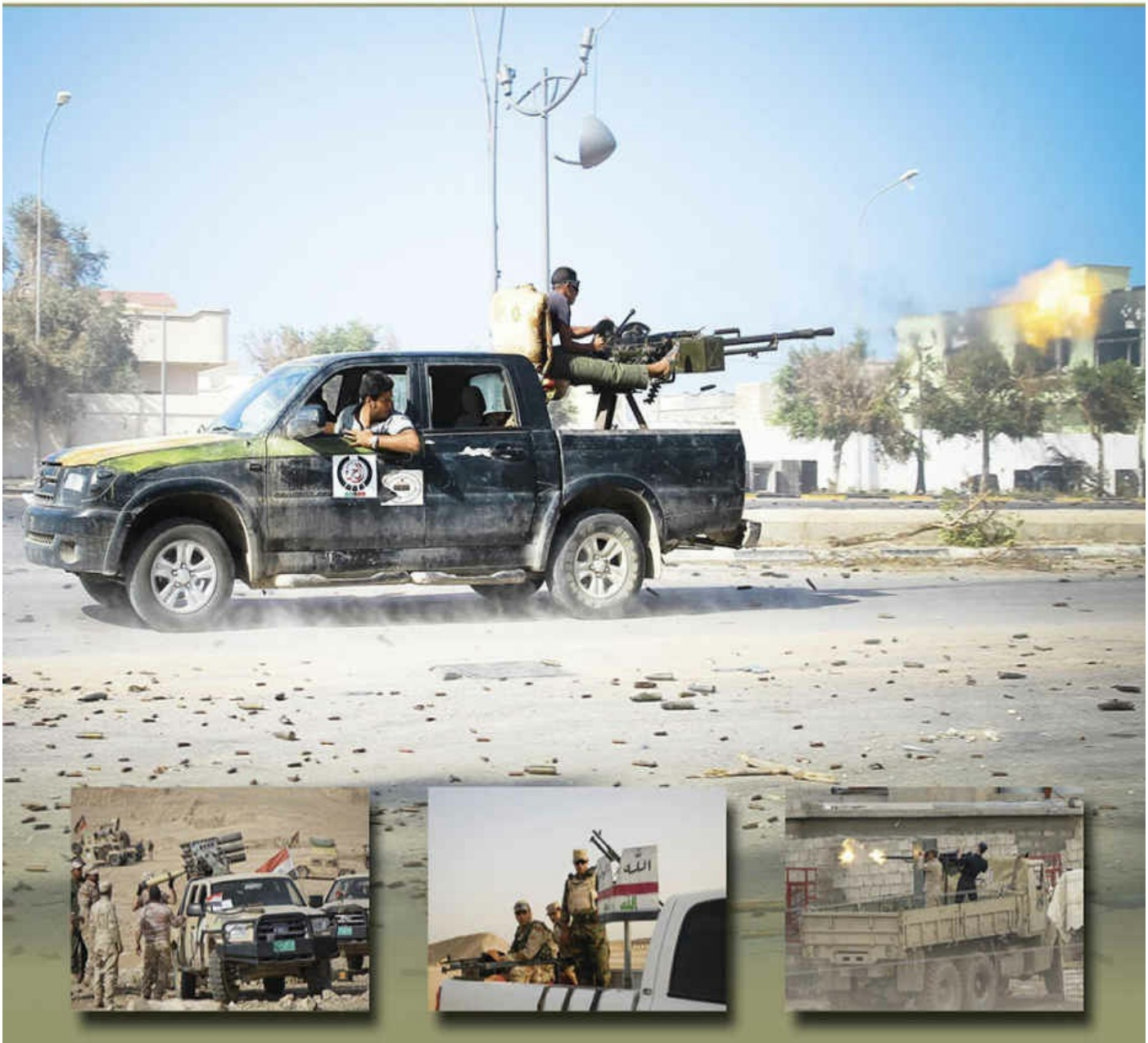

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NEW VANGUARD 257

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INTRODUCTION

In Coalition Forces' briefings on the war against Islamic State they are referred to as 'improvised fighting vehicles'. In the awkward language of US military type-classifications, they are 'non-standard tactical vehicles'. To almost everyone else they are 'technicals', the cavalry of the modern asymmetric battlefield.

The term 'technical' was born during the brutal Somali Civil War in the early 1990s as humanitarian non-government organizations (NGOs) attempted to relieve the crippling famine blighting the east African nation. Required to remain visibly neutral, and prohibited from carrying arms themselves for self-defence, these NGOs instead hired local Somali gunmen called mooriyan to protect the aid shipments and guard their facilities.

The costs for the hire of these mercenaries were listed in the NGOs' expense claims innocuously as 'technical support'. From this the gunmen and their iconic vehicles, the Mad-Max-style armed pick-up trucks, became known as technicals. The US Army's Combat Studies Institute in their official history of humanitarian operations in Somalia even mentions the practice: 'the term "technicals", referring to the armed vehicles employed by Somali bandits and factional militia, was a fallout of the NGOs referring to the armed personnel they hired for protection as "technical advisers".'

One of the earliest images of what would become the modern technical, two members of the Popular Front for the Liberation of Palestine pictured in Amman, Jordan in 1970. The weapon appears to be a 7.62mm SG-43 MMG. (Photo by Genevieve Chauvel/Sygma via Getty Images)

The US military's history of operations in Somalia agrees: 'Since UN and private volunteer organizations were generally prohibited from hiring armed security forces, they instead hired local tribesmen as technical assistants hence the nickname "technicals". The technicals were armed bodyguards, often driving pick-up trucks or land cruisers [sic] with machines guns or other heavy weapons mounted.' Note, however, that a second and conflicting account of the origin of the name has appeared in print in recent years which we will examine when we look at Somali technicals later in the book.

A 14.5mm ZPU-1 or ZGU-1 cannon-armed technical of the Amal militia firing into the Sabra refugee camp during battle with Palestinian fighters, 1985. (Photo by Bill Foley/The LIFE Images Collection/Getty Images)

Technicals make an ideal choice for insurgent or guerrilla armies. A decade before the humanitarian disaster in Somalia, Chadian forces used pick-up trucks mounting

heavy machine guns and anti-aircraft cannon to rout Libyan invaders and win the much-heralded ‘Great Toyota War’. In Lebanon, factional militias rode into battle on all manner of technicals throughout the late seventies and into the eighties. Decades later, the technical became the mainstay of Libyan and Syrian insurgents.

It’s easy to see the advantages of the technical for these irregular forces. Firstly, there is the question of training. Most modern military vehicles require at least some degree of instruction – the more sophisticated the vehicle, the greater the learning curve. Whilst militias occasionally employ tanks and other captured or donated armoured fighting vehicles (AFVs), they simply cannot make the most of such vehicles, nor can they maintain them. Consequently, they are often relegated to duty as heavily armoured but immobile pillboxes. Certainly in any combat with opposition tanks manned by competent crews, the fight will be quick and one-sided.

By contrast, technicals can be driven by almost anyone. They can be easily repaired with basic mechanical skills. Parts are common and cheap – a key factor in their popularity in the likes of developing nations such as Afghanistan or Yemen. Even the heavy weapons that are mounted in the tray bed are typically Russian- or Chinese-manufactured, meaning they are built to operate with little maintenance and loose tolerances. Most are straightforward to operate, the proverbial point and shoot; perfect for the average militia gunman in the developing world.

The supply of technicals, at least the base platform without weapons mounted, also neatly skirts any bans or prohibitions on military aid as they have a legitimate civilian use. As we will see later in the book, some manufacturers have done all in their power to restrict supply of their vehicles to repressive regimes and insurgents, whilst others have revelled in their products’ association as militia ‘battlewagons’, as the Somalis refer to their gaudily painted technicals.

In terms of tactics on the battlefield, the technical is again the ideal platform for the irregular. At its simplest, they allow crew-served heavy weapons to be transported and employed where they are needed without the requirement for towing vehicles or limbers. The technical itself can also be rapidly redeployed, suiting perfectly the ‘shoot and scoot’ ethos of the guerrilla fighter.

Even in asymmetric conflicts against First World opponents, this ability allows the technical at least some chance of escape from the inevitable mortar barrage or attack helicopter sortie that is the usual fate for insurgent heavy weapons that outstay their welcome. As readers will learn as we discuss the brushfire wars in the Western Sahara and Chad in particular, this mobility serves as an enabler of classic irregular raiding and swarm tactics.

The supply of technicals to the Sahrawi People’s Liberation Army (SPLA), for example, allowed them to adapt centuries-old desert cavalry tactics – now, instead of using camels or stallions, the guerrillas outflanked and surprised their enemy in fast-moving Toyota pick-up trucks. Similar tactics gave Chad the upper hand against Libyan conventional forces; the Libyans simply couldn’t react fast enough to engage the agile Chadians.

The technical can also give the irregular a certain degree of deniability. With the weapons stripped out, the technical is just a simple truck used to transport goods to market. It allows insurgents to use the truck as a troop transport or resupply vehicle that will be difficult to positively identify under most Western rules of engagement (ROEs). Of course this cloak of deniability is also what makes the technical attractive to Special Operations Forces (SOF) as, at a distance, they will resemble the locals or perhaps even fellow insurgents, allowing SOF to either pass by unhindered or advance close to the enemy.

Whilst the term itself may have originated in Somalia in the nineties, the idea of armed light trucks is hardly new. Examples can be traced as far back as World War I, with the addition of a .303 Vickers MMG (Medium Machine Gun) to the Ford Model T for Commonwealth service in Mesopotamia, whilst others recorded in Palestine mounted the Lewis LMG (Light Machine Gun). The Fords were light, easily repaired and were better in difficult terrain than the Rolls Royce armoured cars they sometimes operated alongside. They were also nimble enough to escape from danger, a key factor for small patrols far from friendly lines.

Perhaps the most well known of these units were the Light Car Patrols, operational between 1915 and 1918 against the Turkish-supported Sanusi Brotherhood. These Light Car Patrols were drawn from the Yeomanry but included many Australians and New Zealanders and conducted wide-ranging armed reconnaissance operations across Egypt, Palestine and Syria.

The Light Car Patrols would have a disproportionate, if largely unknown, impact on the development of desert reconnaissance and SOF. Their missions inspired the exploits of desert explorer Ralph Bagnold during the inter-war years. Bagnold went on to form the famous Long Range Desert Group (LRDG), patterned after the Light Car Patrols and even relying upon reconnaissance reports and maps of the region filed by their predecessors more than 20 years earlier! Anecdotal accounts even suggest that the LRDG uncovered the tracks of Light Car Patrols still evident deep in the desert more than two decades later.

These Model Ts were the inspiration for the armed Jeeps and trucks of the LRDG and later the Special Air Service (SAS) during the Western Desert Campaign of World War II. The LRDG operated a range of Chevrolet and Ford 30cwt trucks mounting an impressive array of weaponry resembling modern-day technicals although their primary task remained covert reconnaissance. Their SAS compatriots tended towards a far more offensive role, and their Jeep-mounted raids on Luftwaffe airfields and fuel dumps became the stuff of legend.

Post-war, such vehicles found favour both with SOF for long-range reconnaissance and direct-action missions behind enemy lines, and with regular armies who saw the benefit of mounting crew-served weapons and anti-tank guided missiles (ATGM) on fast-moving and nimble four-wheel-drive (4WD) trucks.

The US Army developed their Jeep replacement in the form of the M151 Military Utility Tactical Truck (MUTT), which included versions mounting recoilless rifles

(RCLs) and TOW (Tube-launched, Optically tracked, Wire-guided) missile mounts. The elite US Army Rangers even had their own M60 machine-gun-equipped Gun Buggy MUTTs that saw action in Grenada. Of course the MUTT was later replaced by the iconic HMMWV (High Mobility Multipurpose Wheeled Vehicle) or Humvee.

The British also continued to see the advantages of highly mobile wheeled platforms and developed a number of reconnaissance and anti-tank vehicles based on their famous Land Rover design. Curiously, most other NATO countries, and certainly their adversaries in the Warsaw Pact, favoured much more heavily armoured vehicles like the BRDM to fulfil both roles. The benefits were, however, not lost on the guerrilla and irregular forces fighting the brushfire wars of the sixties and seventies, a topic we will return to later. Before we do, we must establish what exactly constitutes a technical.

Homemade Islamic State armoured technicals built on a commercial light truck chassis designed as suicide vehicle-borne IEDs (SVBIEDs). Note the gun shields fitted to the centre vehicle which typically mounts a PK-series medium machine gun to suppress defenders as the car bomb is driven at the target. Such vehicles were much in evidence during the 2017 battle for Mosul and in Syria targeting Kurdish forces. (Photo by Yunus Keles/Anadolu Agency/Getty Images)

For the purposes of this book, we will consider technicals to be armed civilian vehicles, equipped with a rear-mounted crew-served heavy weapon or similar armament. We will cover a range of vehicles to include SUVs (sports utility vehicles), pick-ups and cargo and transport trucks, but all will have been modified with weapons. The key trait is that, to be really termed a technical, the vehicle in question must have begun life as a civilian design. We will consider the odd example that falls outside of these criteria, erring on the side of interest rather than slavish categorization, particularly as some of the examples of former military vehicles transformed into technicals little resemble the original.

Civilian vehicles used for resupply, medical evacuation or transport, even if equipped with homemade armour, for example, do not fall into our classification as they do not carry any form of integral armament. We will cover the grim recent

phenomena of what are essentially armoured technicals serving as mobile suicide bombs in Syria and Iraq. Finally, we will also look into the military use of the technical by the world's armies, and specifically by their SOF, as the preferred transport of the terrorist and insurgent goes full circle to become the preferred ride of the elite special forces.

TECHNICAL MOUNTED-WEAPONS OVERVIEW

In an effort to minimize repetition and to provide a more complete understanding of the weapons mounted on technicals, we will briefly examine the key types, capabilities and manufacturers of the more common weapons platforms.

Medium Machine Gun (MMG) and General Purpose Machine Gun (GPMG)

These are the most common weapons used on SOF technicals and those in service with Afghan and Iraqi security forces. Standard infantry versions mounted via dedicated pedestals, but allowing the weapon to be dismounted if required, are typical, although both anti-aircraft and sustained fire tripods are also encountered, often crudely bolted to the tray bed of the technical or simply (and unsteadily!) supported by sandbags.

The Russian PK, PKM and its modernized version, the Pecheneg PKP, typify this class of medium machine gun. Chambered for the 7.62x54mm, the PK is belt fed with a cyclic rate of fire of between 650 and 750 rounds per minute and an effective range of 1,000 metres, although, in any discussion of technical mounted weapons, all range estimates should be considered open to significant question, as both the quality of the mount and the ability of the shooter factor heavily into the equation. Notwithstanding, it is also extremely difficult to shoot accurately from any moving vehicle.

An al-Shabaab insurgent proudly displays his 7.62mm PKM MMG in front of a gaudily attired but well equipped technical mounting both an 82mm B-10 recoilless rifle and what appears to be a .50 M3 HMG in Somalia, 1996. (Photo by Ali Musa Abdi/AFP/Getty Images)

The older Russian SG-43 and SGM MMG, known as the Goryunov, and also chambered for the 7.62x54mm round, is often encountered on African and in particular Somali technicals where older weapons continue to soldier on. The PKT, a version of the original PK designed for mounting in the coaxial position in the turret of an armoured vehicle, is also commonly pressed into service on insurgent technicals. Lacking a stock only further reduces the accuracy of this weapon. Chinese copies of the PK and SG series are also commonplace.

Western-supplied insurgents, and US and NATO SOF, typically operate versions of the Belgian-designed Fabrique Nationale MAG58 on their technicals. A belt-fed 7.62x51mm machine gun with a cyclic rate of 750 rounds per minute, the MAG58 is known as the M240 series in US service whilst it is better known as the ‘Gimpy’ or L7A2 GPMG in British Army hands. Its lighter 5.56x45mm cousin, the Minimi or M249 Squad Automatic Weapon, is also sometimes deployed on SOF technicals as a secondary, close-in weapon.

Alawite Arab Democratic Party militiamen manning a 12.7mm DShK HMG-equipped CJ-series Jeep technical in northern Lebanon, 1985. Note the ammunition belts hanging off the back of the Jeep (where they can become dirty and cause stoppages) and the firing stances of the AK-47-armed militants – all point to a less than professional organization. (Photo by Nabil Ismail/AFP/Getty Images)

Heavy Machine Gun (HMG)

The HMG class is typified by the Russian DShK or Degtyarev 12.7mm, informally referred to as the Dushka or Dooshka (an Iranian copy, the MGD-12.7, is even sold under that brand name). The DShK has been widely adopted as the preferred weapon system for insurgent and guerrilla technicals worldwide. A modernized Russian NSV version of the DShK (and the Serbian M02 Coyote version of the NSV) is also occasionally seen in use particularly in the hands of Russian-backed irregulars in Syria.

Respected for its reliability and packing a heavy punch, the DShK fires at a cyclic rate of 575–600 rounds per minute with an effective range of some 1,500 metres. Mounted on technicals, it is an ideal dual-purpose weapon for the insurgent, able to engage both ground targets and low-flying helicopters. Chinese copies have been spotted in the Middle East using a dedicated anti-aircraft (AA) tripod, although the AA sights are often missing from these insurgent examples.

Less commonly encountered in insurgent hands is the US Browning M2 family of .50-calibre HMGs, although examples have been seen in Somalia, Libya and Lebanon and with Western-backed irregulars in southern Africa. It is widely employed by Western SOF on their technicals including by US Army Special Forces, Navy SEALs and UK Special Forces (UKSF).

Anti-Aircraft Gun (AA)

Along with the DShK, Russian and Chinese AA guns are by far the most prevalent heavy weapon encountered on insurgent technicals. Two types are common: the 14.5mm ZPU based on the KPV HMG design and the 23mm ZU-23-2 cannon. A range of other types, including the 20mm Zastava, 35mm Oerlikon and even ancient Russian 57mm S-60s, are also seen, although in far fewer numbers.

A stolen Médecins Sans Frontières Land Cruiser mounting a 14.5mm ZPU-2 cannon in Monrovia, Liberia, in 1996, during the First Liberian Civil War. (Photo by Patrick Robert/Sygma via Getty Images)

The ZPU is manufactured in three variants: the single-barrelled ZPU-1, the twin-barrelled ZPU-2 and the fearsome four-barrelled ZPU-4. The ZPU-1 and 2 are the most common and can be used against both ground and air targets. In the Libyan Civil War, technical mounted ZPUs were employed in place of traditional artillery to suppress targets in preparation for ground assaults.

The ZU-23-2 is even more powerful, a fact that has resulted in more than one video shared on social media showing the recoil of the twin 23mm cannon tipping over some poorly balanced technical! The 23mm round offers both the ability to engage ground and air targets at extended ranges and an anti-armour capability. For example, Houthi

insurgents have successfully engaged Saudi tanks in Yemen, whilst the weapon is also credited with downing a number of Syrian Air Force helicopters.

Good detail of a camouflage-painted 23mm ZU-23-2 cannon in use with Taliban forces in 1995. The truck is likely a Soviet GAZ-66. (Photo by Terence White/AFP/Getty Images)

Recoilless Rifle (RCL)

The recoilless rifle is the insurgent's principal anti-tank capability. Although an outdated design, the RCL's method of operation makes it ideal for use on technicals as it allows heavy-calibre projectiles to be fired from relatively lightweight weapons. The RCL has seen extensive use on technicals, with the American 106mm M40, the Russian 73mm SPG-9 and the Russian 82mm B-10 (along with its Chinese copy, the Type 65) being the most popular.

All offer a direct-fire anti-tank capability that can damage even some modern Western designs. They are equally highly prized for urban warfare against fortified enemy positions. Libyan and Somali technicals mounting RCLs are typically extensively, if crudely, modified to accommodate these long-barrel weapons, resulting in vehicles lacking any cab whatsoever.

Anti-Tank Guided Missile (ATGM)

Although, as we shall see, the use of Milan ATGMs mounted upon technicals in the 'Great Toyota War' was likely a myth, ATGMs have in fact been mounted and successfully fired from technicals. The first such use was likely in the Western Sahara in the late 1970s, with AT-3 Saggers launched from Land Cruisers, but both American and Iranian copies of the TOW ATGM have been more recently employed in Syria. Successful deployment of ATGMs does, however, require some minimal instruction and continued maintenance of the launcher itself, making it less than ideal for many insurgent forces.

Multiple Launch Rocket System (MLRS)

Based on the Russian Katyusha or Grad principle of unguided rockets fired from multi-barrel launchers, the MLRS concept has been widely employed on insurgent technicals. Jury-rigged mounts have been developed to allow a range of launchers from the 12-tubed Chinese 107mm Type 63 to the 32-tubed Russian 57mm UB-32-57 to be fired from the backs of technicals. These ad hoc MLRSs have been enthusiastically adopted by insurgent and guerrilla fighters from the Taliban to the Islamic State.

Looking for all the world like the dreaded wartime Nebelwerfer, the MLRS platform offers the insurgent an indirect fire capability akin to light artillery, albeit with somewhat questionable accuracy, particularly hampered without the use of forward observers although there is increasing evidence that insurgents in Iraq and Syria are using commercially available drones to correct the fall of shot for these rocket systems. The MLRS can also be direct fired, a mode often used against enemy forces in built-up areas.

A 122mm Grad unguided rocket is fired from a long wheeled base Ford pick-up operated by the Popular Mobilisation Units during the 2016 battle for Kirkuk. Unfortunately the launcher mechanism has been obscured by smoke from the launch, concealing whether it is a multi or single tube launcher but both are common. (Photo by Mohammed Sawaf/AFP/Getty Images)

Although this section has covered the most widely employed weapons mounted upon technicals, the reality is only limited by the often wildly inventive imaginations of the end user. Later in the book we will cover incidences of the employment of light and medium mortars, automatic grenade launchers and even the main guns from cannibalized infantry fighting vehicles like the BMP-1.

BEIRUT

Whilst Somalia may have been the birthplace of the term, Beirut in the late seventies and early eighties was the birthplace of the concept of the technical, particularly in the hands of urban guerrilla fighters. Indeed, early examples of armed pick-up trucks were employed by Palestinian factions on the Gaza Strip as early as the late 1960s, although many of these were simply unmodified pick-ups with a machine gunner in the bed.

From these humble beginnings, the technical became one of the key weapons platforms for virtually every faction engaged in the brutal Lebanese Civil War that destroyed the city once known as ‘the Paris of the Middle East’. The conflict had erupted initially between the Christian Phalange militia and the Palestinian Liberation Organization (PLO), although it soon blossomed to include a myriad of competing factions and shifting alliances, with Iran, Syria and Israel playing major roles in both overt and covert support for their chosen proxies.

Iraqi soldiers loading an Iranian copy of the 12-tubed 107mm Type 63 MLRS mounted upon a Ford Ranger in Iraq 2017. The traditionally poor accuracy of such systems is improved by the use of quad-copter drones operated as aerial forward observers, a tactic used by both sides in the conflict. (Photo by Captain Timothy Irish, US Marine Corps)

The militias fighting in Lebanon discovered that AFVs were much harder to acquire, and maintain, than Russian- and Chinese-made crew-served weapons, which were supplied in great numbers by their state sponsors. 4WD vehicles in both civilian guise and assorted military Jeeps and Land Rovers were also especially plentiful, and industrious militias soon began to combine the two, building the first real modern technicals.

The technical illustrated another of its attractions for irregular forces in Beirut with its mobility within urban terrain. AFVs were slower, much louder and far less manoeuvrable within tight city streets clogged with rubble and barricades. Without capable and integrated infantry support to defend them, AFVs could be rapidly

surrounded and dispensed with by RPGs (rocket-propelled grenades) and recoilless rifles, both of which were in abundant supply in Lebanon.

The practice of bolting an anti-aircraft gun into the bed of a truck or pick-up in Beirut was also driven by the battlefield environment itself. Fighting from the ruins of multi-storey apartments or office blocks was the norm and the weapons systems mounted in most AFVs simply couldn't elevate their barrels high enough to engage their attackers. AA guns were pressed into service and proved ideal in combating snipers and RPG teams on rooftops and upper floors. This innovative use of AA cannon would later be repeated by the Russians in both Afghanistan and Chechnya to combat opponents utilizing the high ground.

An Amal M35 'heavy technical' or 'gun-truck' mounting a 23mm ZU-23-2 AA cannon, West Beirut, 1985. All factions in Lebanon mounted the versatile ZU-23-2 on everything from light trucks to M113 armoured personnel carriers. (Photo by Bill Foley/The LIFE Images Collection/Getty Images)

A bewildering variety of pick-up and light trucks, both military and civilian, were present in Lebanon. The Syrian Army had adopted the Series III Land Rover in the 1970s, whilst the Lebanese forces had purchased a large number of Series II and III Land Rovers alongside their M38 and later M151 Jeeps. Unlicensed Iranian Land Rover copies manufactured by Morattab were also a common sight. Indeed it was possible to see virtually every version of the Land Rover during the Lebanese Civil War and the platform was used extensively by all factions.

A 107mm Chinese Type 63 MLRS firing from a Dodge technical, Beirut, 1986, one of the earliest examples of a technical-mounted MLRS. Due to their inaccuracy, they are more of a terror weapon. (Photo by Maher Attar/Sygma via Getty Images)

These Land Rovers employed by both militia and government forces had one thing in common; invariably, some form of heavy weapon would be pintle-mounted in the bed. Most sported a machine gun, from elderly Browning .30cals to DShK HMGs. Some featured gun shields to provide a modicum of protection to the gunner. Others carried various recoilless rifles, from B-10s to M40s.

Like the Land Rover, all factions employed the Toyota Land Cruiser equipped with RCLs and HMGs. Civilian CJ-series Jeeps were also very common. The Progressive Socialist Party, or PSP, used American Dodge and Chevrolet pick-ups mounting AA guns including the Zastava M55 and the ubiquitous ZPU-1, whilst some of their larger Chevrolet C20 flatbeds sported the formidable four-barrel ZPU-4.

US-made M35s, the famous ‘deuce and a half’, were modified to mount heavy AA platforms like the ZPU-4. The Lebanese Forces militia deployed large numbers of Iranian-made Keohwa M-5GA1 Jeeps mounting the M40 RCL, the Milan ATGM and the Chinese Type 63 12-barrelled rocket launcher. Indeed this appears to be the first documented use of such field expedient MLRSs on a technical. Years later, such employment would be common during the civil wars in Libya, Iraq and Syria.

A

1: This Libyan technical, built from a cut-down Land Cruiser, mounts the popular, but in this case somewhat rusted, 106mm M40A1 recoilless rifle (or the almost identical Chinese Type 75 based on the US design). Although this appears to be an American original, Iranian-produced copies have also been encountered in Libya. In fact, the recoilless rifle remains one of the most popular types of technical mounted weaponry with rival Libyan militias – Russian 73mm SPG-9s, 82mm Chinese Type 65s and Russian B-10s all widely seen.

Note the spray-painted camouflage pattern which is in the minority on Libyan technicals. The militias instead tend to favour bright nationalistic colours, complete with decals or stencilled symbols, emblems or crests from their respective organizations. The crews often live from the vehicles and bed rolls, blankets, water bottles and canned foods nestle with spare ammunition in the rear bed.

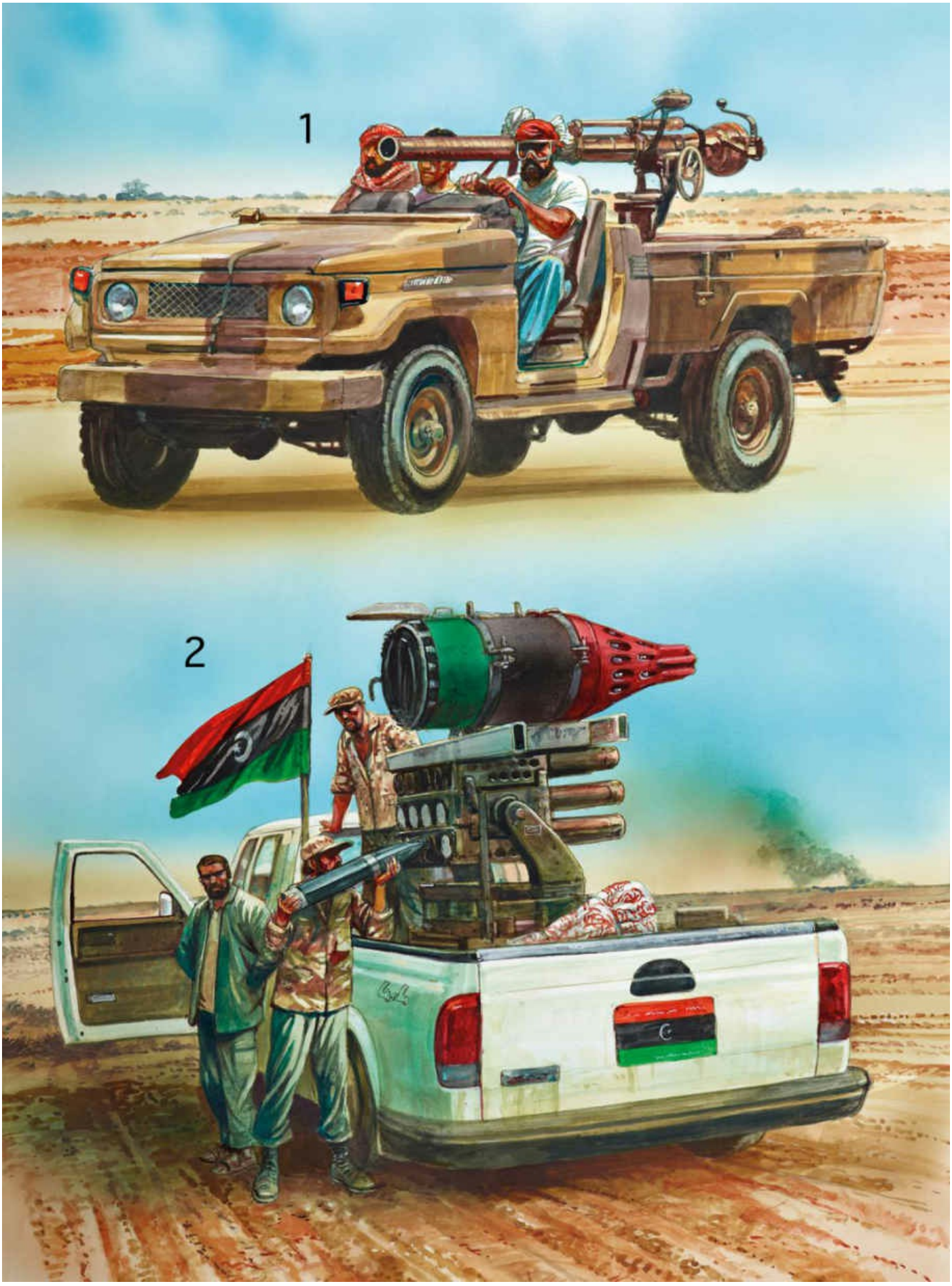
The prominent use of Toyota trucks as technicals by the militias has led to Toyota dealerships, which only reopened in Libya in 2012, to limit the importation of certain models with heavy duty suspensions as these are favoured by the militias due to their ability to better handle the recoil of heavy weapons. They also routinely refuse to sell vehicles if they believe they will be converted to technicals or used in the fighting.

2: Another Libyan technical, this time based on the iconic Toyota Hilux. Again, as is common amongst Libyan forces, the vehicle is left in its factory colours however non-tactical they may be!

This technical is also representative of the massive popularity of the unguided aerial rocket. With little in the way of traditional artillery and with few trained pilots to operate captured aircraft, the militias instead found increasingly innovative ways to mount liberated stocks of Russian-designed 57mm aerial rocket pods.

They also widely employ the 107mm rocket, typically launched from a 12-tube array based on the Chinese Type 63 but also manufactured in Iran as the Fajr-1 and North Korea as the Type 75. The Libyan Army were reported to have several hundred Type 63s in their armouries prior to the civil war and examples of the North Korean copy have also been found in use. The rockets have a nominal range of some eight kilometers although it is doubtful any fired from improvised technical mounts could reach such distances, at least with any degree of accuracy.

This technical uses both types of weapon with the 107mm Type 63 multiple launch rocket system on the bottom and the 16-barrel 57mm UB-16-57 firing the distinctive Russian S-5 rocket on top. Note how the UB-16-57 has been painted in national colours. Both weapons would be fired by remote trigger due to the impressive backblast.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AFRICA

As the concept of the technical matured in the bloody streets of Beirut, half a world away, in the Saharan deserts of North Africa, the technical was replacing the horse and camel as the cavalry of the insurgent and featuring in a war that would forever be associated with the technical. It was also enabling ancient desert raiding tactics to again confront and confound larger and better-equipped opponents.

The Sahrawi People's Liberation Army, or SPLA, the armed wing of the Polisario Front (Popular Front for the Liberation of Saguia el-Hamra and Río de Oro), fought against both Moroccan and Mauritanian forces for independence in the Western Sahara from 1973 to the current uneasy ceasefire brokered in 1991.

The SPLA used age-old guerrilla raiding tactics known as Ghazzi. This saw them utilize the manoeuvrability and speed of their technicals against their more conventional opponents. Historian Besenyő János described Ghazzi as being, 'In the spirit of the Sahara-Arab traditions – and due to low standards of training and a shortage of heavy weapons – the Polisario organized guerrilla operations (ghazzi). Their units (kataeb), equipped with Land Rovers and light personal weapons, would cover several hundreds of kilometres, deliver a quick raid, then disappear.'

SPLA Land Rovers – many captured licence-produced versions produced by Santana in Spain – were equipped with all manner of weapons from RPD LMGs to DShKs and RCLs. The SPLA were the first to employ ATGMs mounted on technicals using the Russian AT-3 Sagger wire-guided missile. They modified a range of commercial and military trucks including Unimogs, cutting away the cabs and mounting M2 HMGs in the rear tray. Indeed the SPLA's inventiveness was likely inspiration for future generations of insurgents and irregulars, including the Chadian Force Armée Nationale Tchadien (FANT) in the Great Toyota War a few years later.

THE GREAT TOYOTA WAR

‘Small groups of Toyota desert vehicles, with 106mm recoilless rifles mounted at the rear, wheel and charge like cavalry in the vastness of the Sahara. Outriders hang from the sides, firing their AK-47s with deadly grace. Very young and therefore very brave, the men of these small fighting units, or escadrons, whip their Toyotas’ flanks until the vehicles seem to snort and froth at the bit like fine-blood Arab stallions. The young soldiers move silently, without war cries except for the high-pitched scream of their engines.’

With these words in a 1984 article, *Time* magazine christened the then-current conflict in Chad as the Great Toyota War. If Beirut was the birthplace of the modern technical, Chad and the Great Toyota War were certainly its coming of age.

Long-time Libyan meddling in Chadian affairs had boiled over into open intervention when Libyan forces invaded Chad in February 1978. Using local Libyan-backed insurgents, known as the Frolinat, to spearhead their attack and supported by Libyan tanks and air cover, the Chadian Army were saved by the timely arrival of French ground-attack aircraft that challenged Libyan air superiority and eventually forced the invaders to withdraw.

A 106mm M40 recoilless rifle-equipped Jeep of the Chadian Force Armee Nationale Tchadien (FANT) during the famous Great Toyota War, 1987. FANT Jeeps and Land Cruisers featured the M40 along with Milan ATGMs and both M2 and DShK HMGs. (Photo by Dominique Faget/AFP/Getty images)

For much of the following decade, fierce fighting erupted periodically as Libya made repeated incursions into Chad, taking and holding ground from the floundering FANT. The ill-trained and poorly equipped Chadians attempted to fight Libyan armoured and mechanized forces with conventional infantry tactics but consistently came off second best, bettered by Libyan tanks and artillery. At times, only French intervention from the air saved them from complete destruction.

By the mid-1980s, FANT was receiving strong US support against their now-mutual enemy, Libyan dictator Muammar al-Qadhafi, including deliveries of arms and munitions. The FANT leadership cleverly didn't ask their state sponsors for tanks or armoured personnel carriers (APCs); they understood that their poorly trained troops would be unable to operate them effectively in either the mechanical or tactical sense. Instead they requested large quantities of Toyota Land Cruisers. Along with the Toyotas, the FANT received shipments of Redeye SAMs (surface-to-air missiles) and French Milan ATGMs.

Now the FANT could provide their forces with at least a limited air defence umbrella that forced Libyan pilots to fly higher and thus decreased the accuracy of their bombing. With the Milan, the FANT finally also had the means to strike Libyan tanks at extended ranges. At the time, the Milan was the most sophisticated and deadly ATGM available and would easily penetrate the armour of Libyan T-55s and T-62s. The Land Cruisers meant they could get the Milans into positions where they could be most effective.

Historian Kenneth M. Pollack explains: 'One serious problem experienced by FANT … was that its tribal warriors had great difficulty modifying their traditional desert-warfare tactics to apply to massed infantry operations. The new equipment provided by the Americans and the French, particularly the large numbers of Toyota four-wheel-drive trucks … equipped with crew-served weapons, allowed the FANT to return to the traditional tactics with which they were most comfortable – and with the added benefit of modern firepower and mobility.'

Sudanese government forces lounge in 14.5mm ZPU-2 and 23mm ZU-23-2 cannon-equipped technicals captured from the Justice and Equality Movement (JEM) insurgents in southern Darfur, 2015. (Photo by Ashraf Shazly/AFP/Getty Images)

Like the SPLA in the Sahara, the FANT used swarming tactics, suddenly appearing on the Libyans' flanks and striking decisively before a rapid withdrawal frustrated any prospect of counter-attack. The Chadians could now use the Libyans' own dependency on slow, armour-heavy, conventional formations against them. The Libyans were simply out-paced as the FANT ran literal rings around them, striking with the Milans and ZU AA cannons mounted on their Land Cruisers before disappearing into the desert.

Something of a myth has developed around the Great Toyota War in so much as it is often claimed that the Milans were actually mounted on and fired from the Land Cruisers. As dramatic as this sounds, and certainly as we have seen there were similar ATGM-equipped technicals in Beirut and in the hands of the SPLA, the author has been unable to establish any definitive truth to these accounts. All available evidence indicates that their French instructors taught the Chadians to dismount and deploy the ATGM before quickly remounting and withdrawing. Certainly this kind of tactic

seems a much more likely avenue to success. Sadly, conflict continues to plague Chad. The FANT, victors of the Great Toyota War, rebelled against their former leader in a French- (and Libyan-) backed coup in 1990 and deposed their former leader.

Decades later, in the grim civil war in neighbouring Sudan's tragic Darfur region, the guerrillas of the Sudanese Justice and Equality Movement (JEM) fight what they term The Land Cruiser War in likely unconscious homage to the Chadian conflict. Even their tactics are reminiscent of the FANT. For example, more than 30 JEM technicals struck al-Fashir air base in northern Darfur, destroying transport aircraft and Hind attack helicopters on the ground and escaping before the Sudanese could organize a response.

Indeed the JEM hold an unlikely record; they deployed upwards of 300 technicals during one operation in a suburb of the Sudanese capital, Khartoum. A *Times* newspaper interview in 2009 by Anthony Loyd noted one participant claiming, 'You get in as close as you can as fast as you can and keep fighting whatever happens to your vehicle.' Damage to the interviewed fighter's pick-up was explained matter-of-factly: 'We got that from ramming enemy vehicles during fighting over the last month.'

Elsewhere in Africa, the technical also found favour. The Angolan Civil War saw a heavy use of technicals by the insurgent UNITA (National Union for the Total Independence of Angola) against the Russian- and Cuban-backed FAPLA (People's Armed Forces for the Liberation of Angola). Although primarily Toyota Land Cruisers mounting ZPU-1s and DShK HMGs, the insurgents' Cassador (Hunter) battalions included a number of CIA-supplied M998 Humvees, some of which were cut down to accommodate M40 recoilless rifles.

In fact the performance of UNITA in the 1990 battle of Mavinga mirrored the Chadians' during the Great Toyota War. The lightly armoured but fleet-footed Cassador units outflanked the heavier and slower FAPLA T-55s and BMPs, allowing them to attack and melt away in their pick-up trucks before FAPLA could mount an effective counter-attack.

B BATTLE OF WADI DOUM

This plate is a representative scene from the Great Toyota War set at the defining battle of Wadi Doum (or Ouadi Doum) that ended Libyan military ambitions in Chad. The attack against a major Libyan airfield occurred on 22 March 1987 after a number of stunning defeats of Libyan armoured forces in preceding days.

The airbase at Wadi Doum was protected by infantry and anti-aircraft guns supported by T-55 tanks and BMP-1 infantry fighting vehicles behind rows of barbed wire and a number of minefields. Despite this, and even after being warned of an impending attack, the Libyans managed to allow the FANT to breach the main gate and charge onto the airfield in their heavily armed BJ45 Land Cruiser technicals. The T-55s and BMPs both faltered and became bogged in what one *New York Times* journalist described as the 'talcum powder-like sand'. Terrified crews from a number of T-55s bailed as the FANT technicals raced around the airbase engaging targets at will with Milan ATGMs, and cannon and machine-gun fire. Some fleeing Libyans were even caught in their own minefields.

A key radar station controlling an SA-6 SAM battery was captured, and later flown to France for technical examination, as were pristine T-62 main battle tanks that had inexplicably been held in storage by the Libyans. Eleven L-39 bombers and three Mi-24 Hind attack helicopters were destroyed on the airstrip, one of the latter was also captured intact and transported to the United States for evaluation.

The FANT had lost a dozen technicals from mine strikes as they attempted to breach one of the minefields in the mistaken belief that their lighter Toyotas would not set off anti-tank mines and a reported 29 were killed. The Libyans suffered a staggering 1,269 casualties.

SOMALIA

'…the king of the streets since Siad Barre's time has been the futuristic battlewagon known as a "technical" – a Land Cruiser or a pick-up with the cab sawed off and an anti-aircraft machine gun or a large-calibre recoilless rifle mounted on the back. I have watched the triggerman on a passing technical surveying his domain and found myself wondering what it must be like to travel the blasted city with a cannon between your knees,' William Finnegan evocatively wrote in the *New Yorker* in 1995, introducing the Somali technical to the American public.

Somalia, in the Horn of Africa, is the spiritual home of the technical or the battlewagon as the native gunmen or mooriyan prefer to term their heavily armed rides. Many readers will have first encountered technicals in the film version of Mark Bowden's *Black Hawk Down*, an account of the October 1993 battle of the Black Sea in which US Army SOF fought a pitched battle against hundreds of Somali militiamen after two Black Hawk helicopters were shot down. The target of that operation was a warlord named Mohamed Farah Aideed who led one of the most powerful Somali clans.

Former President George Bush – dressed in 'chocolate chip' six colour desert fatigues – inspects a 106mm M40 recoilless rifle-armed Land Cruiser during a visit to US troops deployed on Operation *Restore Hope*, Somalia, 1993. (Photo by Larry Downing/Sygma/Sygma via Getty Images)

As we have earlier noted, the name 'technical' is now widely believed to have originated from the 'technical support' provided by Somali gunmen to aid workers. An intriguing alternate explanation of the origin of the name has, however, emerged in Michael Maren's history of humanitarian aid gone wrong, *The Road to Hell*. Maren claims:

> The use of the term "technical" for improvised battlewagons began in northern Somalia in the early 1980s. The Somali National Movement (SNM) had gotten their hands on some heavy artillery but

needed to make them mobile.

Some engineers in the region had been trained by the Russian arms manufacturer Tekniko, and they undertook the task of mounting the weapons on Land Cruisers. Early attempts failed, often leading to the destruction of the vehicles themselves. Once they'd worked out the engineering, the vehicles became known as Tekniko vehicles, which quickly became anglicized to "technicals".

Whatever the true origin of the name, for Somali warlords technicals were their tanks. In Mogadishu, the number of technicals controlled by a warlord related directly to their respective political and social importance and influence in the strife-torn country. The equation was simple: the more technicals, the greater the power of the warlord in question. When the UN decided to embark upon an ultimately doomed humanitarian intervention in 1992, not surprisingly they soon clashed with the warlords, and with their technicals.

Indeed, Aideed's clan fired on US Marine helicopters in December 1992 from a number of technicals with predictable results as escorting Cobra attack helicopters swung into action. A Marine lieutenant colonel commented at the time, 'If the technicals prove to be a threat, the Cobras and Hueys are there to take them out.' In the incident in question, three technicals were destroyed by cannon fire from the Cobras, and Aideed and the other warlords quickly learnt to conceal their technicals from the air.

The UN also ensured the warlords were aware of their ROEs which stated that 'Organized, armed militias, technicals, and other crew served weapons are considered a threat to UNOSOM [United Nations Operation in Somalia] Forces and may be engaged without provocation.' Task Force Ranger's Delta Force contingent were even more unequivocal: 'If you see a technical vehicle in the open, you're cleared hot. If you see anyone with a weapon, you're cleared hot.'

An al-Shabaab Land Cruiser technical mounting a 12.7mm DShK HMG on an AA tripod, Somalia, 2006. This was the most common type of technical found in the war-torn country. (Photo by Stringer/AFP/Getty Images)

The UN operation managed to negotiate concessions from the warlords that saw a significant percentage of technicals handed in at designated UN cantonment areas. Many canny warlords, playing the long game, surrendered their technicals, or at least their older, more clapped-out technicals, to the UN knowing that they would eventually be returned after the inevitable withdrawal of the United Nations forces.

Remarkably few technicals were involved in incidents with UNOSOM forces and even fewer with Task Force Ranger. A US Army Ranger platoon commander who led a Ranger platoon during the battle of the Black Sea explained to the author that no technicals were encountered during the battle itself, but a number were seen as the embattled US troops exited the city during the infamous 'Mogadishu Mile'. Aideed and his fellow warlords knew the UNOSOM and Task Force Ranger ROEs and kept their vaunted technicals under wraps in garages throughout the city. For this reason, Aideed appears to have ordered none be deployed during the October 1993 battle despite Hollywood depictions to the contrary.

Two types of technical dominated in Somalia. What US Special Forces termed the 'heavy technical' were mainly Mercedes and Spanish Pegaso trucks with AA cannon mounted on the flatbed; the ZPU-1 and ZPU-2, the ZU-23-2 and even the ancient but still-deadly World War II-era 37mm M1939 all proved popular. In contrast, the so-called 'light technicals' were built upon a range of pick-ups although Land Cruisers seemed most prevalent, many of which were cut-down versions with the cab removed to allow full weapon traverse and rotation. Weapons of choice for these light technicals included US and Chinese recoilless rifles and an assortment of M2 and DShK HMGs and SGM MMGs.

Following the departure of the US and UN forces, Somalia descended even further into anarchy and civil war. The Eritrean-backed Islamic Courts Union (ICU) battled with both warlords and eventually against African intervention forces from Ethiopia for control of the capital. After their defeat in 2007, elements of the ICU became the al-Qaeda-affiliated al-Shabaab insurgent group (commonly translated as the 'Mujahideen Youth Movement'). Both the ICU and al-Shabaab continued the widespread use of the technical during this period.

Somali Islamic Courts Union (ICU) insurgents manning a formidable four-barrelled 14.5mm ZPU-4-equipped Unimog-based ‘heavy technical’ in Mogadishu, 2006. (Photo by Stringer/AFP/Getty Images)

Today, even the peacekeepers of the African Union Mission in Somalia (AMISOM) are using technicals in Somalia, including the Djiboutian Army contingent who deploy cargo HMMWVs mounting the ZPU-1 AA guns. Al-Shabaab’s use of the technical in the capital of Mogadishu at least has, however, declined sharply as the vehicles have become an obvious target for Ethiopian attack helicopters flying in support of AMISOM.

Sadly, Somalia and the technical will likely be forever intertwined. In a final and fitting confirmation of both the martial and cultural significance of the technical in Somali society, when Mohamed Farah Aideed was finally killed in 1996 his body was driven to his funeral secured on the back of a Toyota Land Cruiser technical.

C

1: The archetypal Somali technical. Based on the ever popular Toyota Land Cruiser, the cab has been crudely cut away and a spade-gripped 7.62x54mm PKB medium machine gun mounted forward of the passenger seat. The main weapon in the rear bed is the 14.5mm ZPU-1 anti-aircraft cannon. Note the haphazard array of ammunition belts and seating arrangements for the mooriyan passengers.
This is an example of a ‘light technical’ – terminology first employed by US Army Special Forces when categorizing the vehicles owned by a particular warlord. The ‘heavy technical’ is, as the name would suggest, routinely based on a cargo truck such as a Unimog and equipped with heavier armaments to include 14.5mm ZPU-4s, 23mm ZU-23-2s and a range of 35mm and 57mm anti-aircraft guns.
2: This 1964 J40 Land Cruiser is shown in use by an unidentified Druze militia in Beirut in the late seventies. The windscreen has been completely removed to facilitate the firing of the twin-barrelled 14.5mm ZPU-2 anti-aircraft cannon mounted in the rear. Unlike in Somalia, technicals in Lebanon were typically resprayed in more tactical colours however this example retains its factory finish.

2
TOYOTA
1

CHECHNYA AND THE BALKANS

At first glance, technicals would seem to have been the ideal vehicle for the Chechen insurgents who fought Russian forces to a standstill in the Russian–Chechen wars of 1994 and 1999. Recovered insurgent paperwork points to the use of civilian vehicles in the urban battles in the capital Grozny but to transport heavy weapons rather than to use them as firing platforms. A RAND study noted: ‘A wide range of weapons, including mortars, anti-aircraft guns, KPVT and DShK machine guns, and automatic grenade launchers, are moved from point to point in the backs of civilian vehicles such as the UAZ or Jeep.’

As previously noted, technicals are obvious targets when the enemy benefits from both near-constant aerial surveillance and strike capability from fast jets and attack helicopters. The same was true in Chechnya, although the insurgents did operate a limited number of ZPU-2 and ZPU-4 AA cannon mounted on the flatbeds of trucks in the mountains surrounding Grozny. Here, Russian helicopters, including the infamous Hind, could be seen at greater distances and engaged by a mixture of ZPU cannon and SA-7 SAMs.

In the Balkans, modified civilian vehicles were used to mount AA cannon and crude MLRSs adapted from aerial rocket pods recovered from former Air Force stocks rather than the adoption of a dedicated ground mount MLRS like the Type 63 previously seen in Lebanon and Africa. These rocket pods were used in both direct and indirect fire modes, although the ad hoc nature of many of the mounts meant they were notoriously inaccurate.

The war also saw the first use of what would later be termed (in Iraq) ‘hillbilly armour’; improvised armour plating affixed to the technical to provide some limited protection against bullets and bomb fragments, although many of these vehicles were based on farm tractors and TAM and Tatra military trucks rather than on civilian vehicles. Both the use of aerial rocket pods and hillbilly armour would gain prominence years later in the Middle East and North Africa.

AFGHANISTAN

The Taliban and technicals are now indelibly linked in popular media, most likely at least in part due to a segment shown on the popular British television programme *Top Gear* that, whilst championing the incredible endurance of the Toyota Hilux, also highlighted its use by al-Qaeda and the Taliban. The employment of pick-ups by Afghan insurgents, however, predates the Taliban by more than a decade, with American GMC pick-ups smuggled in from Pakistan, often dismantled and carried on the backs of donkeys during the Soviet–Afghan War in the late seventies.

Later, Toyota models were similarly driven or carried into Afghanistan, many procured for the mujahideen by the Pakistani Inter-Services Intelligence Agency and paid for by covert Western aid. Most were used as troop transports rather than as armed technicals due to the constant presence of prowling Russian helicopters, although they were equipped with DShKs and SGMs for specific operations (and sometimes used by Russian SOF in such a fashion as we will discuss in the chapter on Non-Standard Tactical Vehicles).

During the Afghan Civil War of the nineties, Taliban insurgents used Toyota Hiluxs as both transports and as heavy-weapons platforms, including during the pivotal 1996 battle for the Afghan capital, Kabul. Harkening back again to the Great Toyota War, the Taliban employed their trucks to outmanoeuvre their opposition, ‘shooting and scooting’ to reposition their forces. Such tactics helped the Taliban eventually seize the city from their rival warlords.

Before the 1998 Taliban offensive into northern Afghanistan, more than 400 Toyotas were covertly provided by Pakistan and smuggled across the border. These trucks became the Taliban’s cavalry and were nicknamed ‘Ahu’, meaning deer, for their nimbleness and speed. The Taliban mounted a range of heavy weapons on their Ahu, from the typical rusting DShK or ZPU-1 to more exotic fare, including Type 63 launchers.

Rob Krott, an American contractor who saw first-hand the ravages of the civil war in 1998 noted in a 2001 article: ‘Both combatants (Taliban and Northern Alliance) also have enhanced the firepower of light trucks … by fitting them with 32-shot 57mm rocket pods salvaged from combat helicopters (Mi-24 and Mi-25). Because of their combined mobility and firepower they have been extremely effective in recent fighting.’ These were likely the Russian UB-32-57 launchers, later seen in such prolific numbers in Libya. Intriguingly, there is some evidence Russian ground forces in Afghanistan also mounted these launchers on their T-62 tanks, BTR-70 armoured personnel carriers and even Ural trucks as direct-fire, counter-ambush weapons.

A Taliban mobile anti-aircraft battery; a Toyota Hilux with insurgents manning US-made Stinger surface-to-air missiles, Kandahar, 1999. The Stinger's batteries were likely dead although rumours persisted of Chinese-produced copies being supplied to the group. (Photo by Saeed Khan/AFP/Getty Images)

Prior to the US intervention in 2001, the late spiritual leader of the Taliban, Mullah Omar, favoured a white Chevrolet Suburban, whilst terrorist leader Usama bin Laden preferred an air-conditioned Toyota Land Cruiser whilst his lieutenants drove twin-cab Toyota Hiluxs. Televised images of Taliban and al-Qaeda use of its products forced Toyota to issue a statement in 2001 clarifying that only a single Land Cruiser had been legally exported to Afghanistan in the previous five years and that all other Toyota vehicles seen in enemy hands were likely illegally smuggled into the country from Pakistan.

An Afghan National Army SOF technical mounting both 12.7mm DShK HMG and 7.62mm PKM MMG in Helmand Province, 2016. The Ford Ranger in the background belongs to the Afghan National Police and is likely also equipped with an older 7.62mm SG-43 MMG. The NATO-provided Rangers replaced a range of older model Toyotas. (Photo by Noor Mohammad/AFP/Getty Images)

‘Toyota does not have a sales or distribution channel in Afghanistan, and we do not export vehicles to that country,’ explained the Japanese manufacturing giant, keen to distance themselves from any connection to al-Qaeda and their hosts.

Ironically, considering how much the technical has become associated with the Taliban through their infamous use of the Hilux, very few actual technicals were employed by the insurgents after the fall of the Taliban government. This was due largely to the US and British air campaign that had destroyed the majority of such vehicles. Surviving technicals were very carefully shepherded; as in Somalia they were seen as a prestige weapon and afforded considerable influence to the owner.

The Taliban would only risk their precious assets for particularly important or high-profile operations. British forces in Helmand recorded at least one technical mounting an AA cannon in 2007 destroyed by a Javelin ATGM, but it wasn’t until 2009 that the first significant technical activity became apparent. The Taliban positioned a number of truck-mounted AA guns in preparation for a major offensive against the provincial capital, Lashkar Ghar. Two of these pick-up-mounted ZPUs were destroyed by US Air Force A-10s and F-15Es in separate incidents in April.

A rare image of a Taliban technical mounting a 23mm ZU-23-2 anti-aircraft cannon in Helmand Province in 2000. Note the rough hand-painted camouflage pattern. (Photo by Banaras Khan/AFP/Getty Images)

After this, the Taliban were even more cautious with their technicals and once an operation was conducted they would be quickly moved back into camouflaged hides or garages in insurgent safe areas. They also learnt to minimize their exposure to watching eyes in the sky such as drones by concealing the weapon system with tarps or even covering it with produce to appear as if they were farmers heading to market. Despite this, a truck-mounted ZPU-1 was held likely responsible for the downing of an RAF Chinook north of Sangin, the only such incident of its type.

In the tribal areas along the Afghan–Pakistan border where al-Qaeda still maintain a presence, their use of a particular Hilux variant has become iconic according to

Australian counter-insurgency expert David Kilcullen. ‘It’s a bit of a sign you’re dealing with al-Qaeda when you come across them in Pakistan. They use the twin-cab version, because you can carry people and stuff in the back, and also mount a heavy weapon in the pick-up,’ he explained to *Newsweek* in 2010.

The iconic image of US Special Forces in Afghanistan driving a modified Toyota Tacoma near Gardez in early 2002. Note the aftermarket bull-bar, satellite communications (SATCOM) antennae on roof and 7.62mm M240B complete with what appears to be an AN/PAS-13 Thermal Weapon Sight. (Photo by Paula Bronstein/Getty Images)

IRAQ

Technicals played their part in the opening stages of the 2003 Iraq War. The Fedayeen Saddam (roughly translated as ‘Saddam’s Men of Sacrifice’) rode into battle against Coalition armour in Chevrolet, Mazda and Toyota technicals. Their leader, Uday Hussein, was reported to be fascinated by the use of technicals in the battle of the Black Sea (or at least its Hollywood depiction) and equipped his paramilitaries with vehicles mounting a range of PKMs, DShKs and ZPU-1s.

Murray and Scales, in their authoritative history of the Iraq War, note, ‘Intrigued by the apparent success of Somali “technicals” in fighting against American rangers [sic] in the back streets of Mogadishu, Qusay and Uday established a force that mirrored the Somali technicals even down to arming pick-ups and SUVs with pedestal-mounted machine guns and rocket-propelled grenades.’ For many of the Fedayeen, their first taste of battle, however, would be against US armour with predictable results.

Iraqi Ba’ath Party paramilitaries and Fedayeen Saddam irregulars man brand-new Chevrolet technicals mounting 14.5mm ZPU-1s in Mosul, in February 2003. Note the Iraqi flags and images of then President Saddam Hussein on the windscreen. (Photo by Awad Awad/AFP/Getty Images)

The US Army’s Lieutenant General William S. Wallace was moved to comment at the time: ‘The enemy we’re fighting is different from the one we’d war-gamed against. I’m appalled by the inhumanity of it all. The attacks we’re seeing are bizarre – technical vehicles with .50 calibres and every kind of weapon charging tanks and Bradleys. It’s disturbing to think that someone can be that brutal.’

The inevitable result of Fedayeen Saddam technicals meeting US armour in Baghdad 2003. This vehicle appears to have been formerly armed with a 14.5mm ZPU-1 although others were armed with ZPU-2s and DShKs, and the most widely encountered mounted the 7.62mm PKM MMG. (Photo by Sean Smith/Getty Images)

Clad in black and wearing bizarre Darth Vader-style helmets, Uday Hussein's paramilitaries died in droves as Coalition Forces advanced into the Iraqi capital. Some even attempted to attack the flanks of the famous armoured Thunder Runs but were systematically destroyed. The 2nd Brigade of the 3rd Infantry Division reported destroying some 20 Fedayeen technicals during their advance on Baghdad.

The Fedayeen's intended tactic appeared to be an attempt to focus on one section of the column, using freeway access roads to attack with suicide car bombs (SVBIEDs or Suicide Vehicle-Borne Improvised Explosive Devices) and RPG teams along with their technicals, in the hope of immobilizing and isolating a lone Abrams or Bradley.

The Marines entering an-Nasiriyeh to the south also had to contend with Fedayeen attacks. Marine Major Bruce Bell remembers one such ambush: 'The Fedayeen had actually laid out a decent U-shaped ambush spread over ... 500 meters on both sides of the road … They picked a tactically sound, defensively oriented bend in the highway … They also had assembled a column of approximately 10 tanks, armored personnel carriers, and other various "technical" vehicles (mostly pick-up trucks with machine-gun mounts) which they positioned on the eastern flank of the ambush position, hoping to use a north-south trail to move down and flank units caught in the kill zone on the highway.'

US Army troops uncover a cached technical mounting a 12.7mm DShK HMG on an AA tripod during Operation *Phantom Fury* in Fallujah, 2004. Note what appears to be a discarded recoilless rifle to the left of the DShK. (Photo by Scott Nelson/Getty Images)

They were more successful in the north-west where the Fedayeen had been organized into roving hunter-killer units to chase down Coalition SOF. One such unit was suspected of compromising a Special Boat Service (SBS) patrol in north-west Iraq, forcing the SBS to evade and escape. The Australian Special Air Service Regiment (SASR) also encountered Fedayeen technicals and were engaged in a number of ultimately one-sided firefights, including an incident where an SASR trooper used his Javelin ATGM to destroy a pursuing technical.

The use of pick-ups by the Fedayeen resulted in inevitable civilian casualties in what one Iraqi doctor described as ‘mistaken Toyota identity’. Iraqi civilians drove Toyota pick-ups and many of them were painted white just like many of the Fedayeen vehicles. In the heat of combat, it was often difficult if not impossible for a tank gunner or nervous infantryman to distinguish between a genuine Fedayeen technical or SVBIED and Iraqi civilians in a similar vehicle.

Members of the 9th Iraqi Army Division engaging Islamic State targets from a ‘heavy technical’ with a 14.5mm KPV HMG near al Tarab, Iraq in 2017. (Photo by Staff Sgt. Jason Hull, US Army)

A decade later, technicals have again appeared in Iraq, this time in the hands of the so-called Islamic State insurgency. Their use by Islamic State in both Iraq and Syria has led to the technical, and more specifically the Toyota Hilux, being viewed as something of a symbol of the group. News footage often shows Islamic State insurgents riding near-new Toyotas whilst brandishing their distinctive black flag with Islamic State decals affixed to the doors.

Along with the more typical machine guns, Islamic State employ heavy technicals or gun-trucks mounting all types of AA gun. A number of scavenged 37mm M1939 cannon have been seen mounted on Hyundai flatbed light trucks and long-wheel-base Ford pick-ups. Others, like the Russian 2.5-ton GAZ Sadko cargo truck, mount the slightly more modern 57mm S-60 and benefit from hillbilly armour and ad hoc gun shields produced in Islamic State workshops.

Pro-government Shia paramilitaries from the Popular Mobilisation Units (PMU) mounting a 23mm ZU-23-2 in a custom-made armoured turret, west of the Iraqi city of Mosul in 2016. The same turret has been mounted on heavily

armoured commercial flat-bed trucks including tank-style vision slots and armour plating covering their tires. (Photo by Ahmad Al-Rubaye/AFP/Getty Images)

Two of the most surprising technicals seen in action with Islamic State are a Ford F350XL Bobtail mounting a massive Iranian-built 122mm rocket launcher and an F350 Super Duty mounting the turret from a Russian BMP-1 infantry fighting vehicle. In Syria, the 'BMP technical' has become something of a trend, with the turrets being sourced from BMPs that have themselves been turned into heavily armoured SVBIEDs.

During the 2016 battle for Mosul, Islamic State employed not only armoured SVBIEDs but also in a number of cases added a gunner to the vehicle, becoming a 'suicide bomber technical' of sorts. The aim of the gunner – typically armed with a PKM or SGM MMG – is to suppress any fire from the target whilst the driver manoeuvres the SVBIED as close as possible prior to detonation. Other SVBIEDs have even mounted a bank of unguided rockets to clear the path of the suicide vehicle.

Iraqi Army soldiers manning a pair of PKM MMGs on an Isuzu technical in 2008. US-donated HMMWVs have since largely replaced unarmoured technicals in Iraqi Army service although they are still widely employed by the Federal Police and militia units. (Photo by Sgt. 1st Class Michel Sauret, US Army)

Technicals are not only employed by Islamic State. Iraqi police and militia units widely utilize technicals mounting MMGs and HMGs along with all manner of US and Chinese RCLs. Shia Popular Mobilization Units fighting with the Iraqi government have even been seen with Iranian Safir Jeeps mounting elderly Russian AT-3 Sagger missiles on simple launch rails manufactured in commercial workshops. The Iraqi Federal Police deployed in a range of technicals including Nissan D22s, Ford F350s and Safirs.

D

1: A Nissan 2400 pick-up converted into use as a technical by the Iraqi paramilitary Fedayeen Saddam during the run-up to the invasion of Iraq in 2003. Note that these Nissans, along with a number of Chevrolet and Toyota models, were essentially stock with a 7.62x54mm PKM medium machine gun on pedestal mount. The Fedayeen crew wear their characteristic black fatigue uniforms and Darth Vader-style helmet reportedly designed by Uday Hussein himself. The helmet had no ballistic protective qualities whatsoever.
2: This Ford F-350 Super Duty dual cab truck has been employed by the terrorists of Islamic State during operations defending their so-called capital Raqqa in 2015. The vehicle has been crudely but comprehensively armoured with metal plates likely cut and welded in the ‘The Workshop’ in Raqqa, a facility producing technicals and homemade armoured vehicles.
The weapon is the four-barrelled 14.5mm ZPU-4 anti-aircraft cannon. The recoil from such a weapon mounted to the comparatively light pick-up truck would be noticeable to say the least and would gradually shake the weapon free from all but the toughest mounting brackets. The extra weight of the armour plating may assist at least to some degree in this regard.

1
NISSAN
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LIBYA

The Libyan Civil War has seen the largest deployment of technicals by all sides in any conflict. It also witnessed some of the greatest mechanical innovations in terms of the types of weapons being mounted on the trucks, whether tactically successful or not. Press images of Libyan technicals often more resemble the latest *Mad Max* sequel than any sort of (para) military force.

This widespread use led to deconfliction problems when NATO aircraft were committed to targeting regime forces, as identifying friendly forces sometimes proved difficult. Despite this, NATO aircraft were very successful in engaging regime technicals. NATO aircrew claimed more than half of their targets were technicals of some description.

A Libyan militia Toyota Hilux mounting a 57mm UB-16-57 aircraft rocket pod in Misrata, 2011. Rebel slogans have been spray-painted over the side of the vehicle – a common affectation alongside the more usual decals and flags. (Photo by Gianluigi Guercia/AFP/Getty Images)

The Libyan rebel groups widely use hillbilly armour plates on their technicals and gun shields to protect the technical's crew from small-arms fire. These are ad hoc affairs constructed from whatever materials are available rather than actual armour plating. The Libyans also sometimes cut the entire cab off their vehicles, lending a wild and ragged Somali look to many of their technicals, most of which retain their civilian paint jobs rather than be resprayed in more tactical tones. Rebel groups even affix colourful decals or hand-painted slogans and symbols on the doors of their technicals.

Rebel tactics both during the uprising and in the later civil war were built around the use of the technical as a force multiplier. They were deployed to suppress the defenders of an objective as a form of direct-fire artillery, allowing dismounted militiamen to close on the enemy on foot whilst rebel tanks dealt with bunkers or

Libyan government tanks. Often the only true indirect fire capability available was from pilfered MLRS platforms mounted on technicals which we will discuss further on in the book.

Inside a Libyan technical workshop where a welder works on mounting a 14.5mm KPV HMG behind a makeshift armoured gun shield in 2011. These workshops were responsible for many of the both innovative and crazy designs seen during the uprising against the regime and the later Libyan Civil War. (Photo by Etienne De Malglaive/Getty Images)

Along with the more typical Toyotas and Mitsubishis, trucks from the Chinese manufacturer Zhongxing (ZX) prominently feature in the hands of the militias, including a model cheekily named the Grand Hiland. Uniquely, the firm used their new-found notoriety in their marketing campaign at the 2012 Beijing Motor Show, where Zhongxing pick-ups were displayed against colourful backdrops of Libyan technicals with the slogan ‘Stronger-Than-War’.

Anti-regime Libyan National Transitional Council (NTC) militia firing a Land Cruiser -mounted 23mm ZU-23-2 anti-aircraft cannon in Sirte, Libya in 2011. Note the NTC seal displayed on the door and the insurgent enthusiastically adding the fire of his Kalashnikov pattern assault rifle. The ZU-23-2 was the NTC’s primary direct fire ‘light artillery’. (Photo by John Cantlie/Getty Images)

Large numbers of 14.5mm KPV heavy machine guns (the same weapon used in the ZPU AA gun) were looted from Libyan Army stores and now feature on many technicals, along with the PKT MMG pilfered from destroyed AFVs. Large numbers of US M2 and M3 HMGs (the latter normally being a variant deployed as a helicopter door-gun) have also been seen, including at least one example mounting twin M2s in what appears to be a factory mount similar to the Platt Mounts systems used by UKSF.

At first glance this collection of Libyan National Transitional Council Nissan-, Mitsubishi- and Toyota-based technicals perhaps more closely resembles a scene from *Mad Max: Fury Road* than a North African rebel army! Note also the wide variety of weapons: 14.5mm ZPU-1s and ZPU-2s, 106mm M40 recoilless rifles, 12.7mm DShKs complete with gun shields and 23mm ZU-23-2s. (Photo by John Cantlie/Getty Images)

Heavy technicals mounting a dizzying array of AA guns are in use as direct-fire artillery to shoot-in ground assaults. Along with the familiar ZUs and ZPUs, 20mm Hispano-Suiza HS.820s, S-60s and even Romanian twin-barrel 30mm Model 80 cannons have all made an appearance. Even Russian Gryazev-Shipunov 23mm and 30mm cannons have been pillaged from former Libyan Air Force aircraft and affixed to a range of light trucks using homemade mounts, although, as we shall see, this is far from the only type of aerial weapon to be reimagined for use on a Libyan technical.

Recoilless rifles, particularly the American M40, are similarly widely employed. The former Libyan Army had some 220 officially in their armouries, and Iranian-made copies have since flooded the market. One Western volunteer, Sam Najjair, wrote of his experience with the weapon: '… driving a big Ford pick-up with our only 106mm cannon on the back of it. This one hit wonder, with rounds about a foot long, including armour piercing ones, was so big we'd had to cut off the roof to get the boom of the cannon to fit. Unfortunately, we were out of ammo for it, and none of us had ever used one.'

Pro-regime forces battle NATO-backed militias in 2012 from a number of Mitsubishi- and Zhongxing-based technicals. To the left is what appears to be a 73mm SPG-9 recoilless rifle, to the right a 12.7mm DShK HMG and in the background an unidentified ‘heavy technical’ fires what is likely a twin-barrel 14.5mm ZPU-2 cannon. (Photo by Mahmud Turkia/AFP/Getty Images)

The Libyans were the first to improvise components from BMP-1s. Along with the use of actual BMP-1 turrets, often with hillbilly armour used to shroud the frame supporting the turret, the 73mm gun itself has been retrieved from destroyed BMPs and mounted in a clumsy mechanism bolted to the tray bed of Chinese ZX pick-ups as a kind of technical mounted cannon. Its accuracy can only be guessed.

Unguided aerial rocket pods pilfered from Libyan Air Force stocks and mounted on technicals became the standard militia MLRS. A report by Armament Research Services in 2014 stated, ‘Rebel forces in Eastern Libya were able to rapidly capture the government’s airbases and large weapons depots, but lacked combat aircraft and trained fighter pilots. Large stockpiles of S-5 rockets were captured early in the revolution, and rebel forces without conventional combat vehicles sought to capitalise on them immediately. As a consequence, anti-government forces were able to field large numbers of light improvised fighting vehicles (”technicals”), and equipped significant numbers of these with S-5 rocket pods.’

A spectacular shot of a just-launched 122mm Grad unguided rocket fired from an improvised mount upon a battered Land Cruiser, Libya, 2011. Although 57mm launchers are more common in the hands of Libyan militias, 107mm and 122mm rockets are also employed. (Photo by John Cantlie/Getty Images)

The S-5 is a 57mm unguided rocket originally developed for use by ground-attack aircraft. The rocket is fired from a variety of launcher pods that differ primarily in capacity, although the most commonly seen on technicals is the UB-16-57 and UB-32-57, capable of launching 16 and 32 rockets respectively. Other rocket types include the 80mm S-8, the 122mm S-13 and the French Matra SNEB, which have all been similarly conscripted as technical-mounted MLRS in Libya.

An excellent view of the types of mounts seen on Libyan technicals. This remarkably well maintained 12.7mm DShK HMG is affixed to a standard anti-aircraft tripod which is then held in place by crude brackets. Typically, it is missing its specialist anti-aircraft sight. (Photo by Mahmud Turkia/AFP/Getty Images)

Today, both competing national governments and the various militia factions continue to heavily employ all manner of technicals in their on-going civil war. Technicals are now produced in workshops dotted around the country. One recent innovation has seen the mounting of the twin-barrel 9K38/SA-16 Djigit SAM system in the rear tray of Land Cruisers as a mobile light air defence platform. Western SOF have also deployed their own technicals to Libya as we shall soon discuss.

SYRIA

Like Libya, the on-going civil war in Syria has seen a bewildering number and variety of technicals deployed by all sides in the fighting. The Syrian Army themselves employ a large number of technicals, including variants built upon the Hyundai Mighty, a flatbed commercial truck available in 2.5- and 3.5-ton variants. The Mighty has been seen in both commercial colours and crudely applied camouflage patterns.

Weapons mounted upon the Mighty include the standard ZPUs and ZU-23s to S-60s and various aerial rocket pods. Heavier trucks including Russian-supplied Ural-4320s mounting twin-barrel ZU-23-2s are also commonplace. In terms of lighter technicals, recent production Nissan Frontiers are operated by the Syrian Republican Guard, including hillbilly armour over the tray, whilst the ubiquitous Land Cruiser mounting anything from the DShKs to ZPUs are in widespread use by the Syrian Army.

If Libyan technicals are characterized by their use of rocket pods, Syria is perhaps noted for the large-scale manufacture of technicals mounting unguided surface-to-surface rockets. These include Chinese, Iranian and Russian types ranging from the 107mm Type 63 to the 240mm Falaq-1. These surface-to-surface systems are much more common in Syria than the air-to-ground rocket pods. There have even been a number of dump trucks turned into launchers for indirect fire IRAMs (improvised rocket-assisted munitions) or ‘lob bombs’.

A Free Syrian Army (FSA) Kia light truck mounting a twin-barrel 14.5mm ZPU-2 cannon fires upon Islamic State positions, north of the tragic city of Aleppo in 2016. Kia trucks have become a common platform for FSA heavy weapons. Disturbingly, Kia automobiles have recently also become the most common make used in Islamic State SVBIED martyrdom operations, often equipped with hillbilly armour to shield the driver whilst he manoeuvres into position to detonate. (Photo by Nazeer Al-Khatib/AFP/Getty Images)

Armament Research Services argue that this may be due to the ‘more prolonged fighting in dense urban areas, where the comparatively weak warheads of S-5 type

rockets are less effective than larger rocket systems'. There is also the question of availability. In Libya, the 57mm and larger-calibre rocket pods from regime helicopters and jets were readily available as air bases were rapidly overrun and pillaged for their stocks. In Syria, regime forces have not lost airfields to the same extent.

Recoilless rifles remain in common use, with the SPG-9 RCL amongst the most visible, although recent evidence of homemade rounds manufactured from doctored 60mm mortar bombs points to difficulties with ammunition resupply. Following their employment in Libya, Islamic State have also built Land Cruiser-based technicals using BMP turrets, including a number that have successfully launched unidentified ATGMs from the rail mounted along the barrel of the 73mm main gun.

Free Syrian Army (FSA) fighters with recent production Toyota Land Cruiser, pictured outside Aleppo in the September 2016 offensive. Note the stencilled call signs on the left rear (Z46 in the later vehicle's case) and the brand-new, US-supplied 7.62mm M240B MMG on a commercially produced pintle mount – all solid clues pointing to close cooperation with Western SOF or intelligence services. (Photo by Cem Ozdel/Anadolu Agency/Getty Images)

The Free Syrian Army (FSA) have experimented with mounting both homemade and Russian-produced 82mm mortars in the beds of Datsun pick-ups and Series 70 Land Cruisers, whilst the al-Qaeda-linked al Nusra have mounted what are either American TOW ATGMs or Iranian copies of the same on their Land Cruisers.

As noted previously, the technical, and specifically Toyota brand pick-ups, has become a potent symbol of the Islamic State. In 2015, the US Treasury Department's Terror Financing Unit launched an inquiry, with the support of the manufacturer, into exactly how Islamic State have procured so many Toyota trucks; an inquiry that is still on-going.

An unidentified militia operating a Chinese Great Wall Super Deluxe mounting a 14.5mm KPV HMG, fighting against Islamic State in the Syrian border town of Koban in 2014. Increasing numbers of Chinese pick-ups have been seen in use as technicals in Libya, Syria and Iraq, a fact that is sometimes bizarrely showcased by their manufacturers. (Photo by NurPhoto/NurPhoto via Getty Images)

Some Islamic State vehicles are undoubtedly captured from Iraqi- or US-supported militias – the US State Department provided more than 40 to Free Syrian Army forces in 2014, many of which were converted into technicals. Iraq remains a profitable, and legal, market for 4WD trucks, unlike Syria, which is black-listed by major manufacturers like Toyota.

Others may have been stolen to order. An Australian investigation established that as many as 800 trucks had been stolen, likely for trans-shipment to Syria. Toyota themselves have stated that they follow ‘a strict policy to not sell vehicles to potential purchasers who may use or modify them for paramilitary or terrorist activities’.

The Syrian conflict had also provided one of the most puzzling tales regarding insurgent procurement of technicals. A Texan plumber who operated his business as ‘Mark-1 Plumbing’ sold his Ford F250 work vehicle to a dealer in 2013 who sold on the truck to an auction house. From there, the story gets somewhat murky. The F250, complete with Mark-1 Plumbing decals, arrived in Turkey and headed to Syria where it was eventually photographed in the hands of a Chechen insurgent group in Aleppo complete with tray-mounted ZPU-1.

Islamic State maintains a factory specifically and solely for building and modifying technicals for deployment in both Syria and Iraq. This location is known as ‘The Workshop’ and is situated in the group’s de facto capital, Raqqa. Although targeted by Coalition air strikes, the facility has thus far survived all attempts at its destruction.

Facilities like ‘The Workshop’ allow Islamic State to continually innovate designs based on battlefield feedback from its fighters. An Islamic State armoured technical based around a 2015 Jeep which even featured firing ports to allow passengers to fire

their rifles whilst inside the vehicle – a feature more often found on infantry fighting vehicles like the BMP or Bradley – is but one recent example.

The anti-regime militias also continually enhance their technicals. One of their most imaginative designs has been the Sham II. Resembling the famous Kubus-improvised armoured car used by Polish resistance during the Warsaw Uprising, the Sham II features armour plating that fully encloses the crew. It is equipped with a remote-controlled PKT MMG, aimed via a commercially sourced video camera fitted to the turret and operated by a PlayStation controller in crude emulation of the remote weapons systems used on AFVs like the Stryker.

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1: Perhaps the most unusual technical featured, this artwork plate illustrates a Houthi insurgent-operated vehicle in northern Yemen in 2016. The weapon is the 20mm M61 Vulcan configured in ground mode as the M176 VADS or Vulcan Air Defence System, the same gun used on the M163 anti-aircraft vehicle and the basis for the Phalanx naval anti-missile system.
Capable of firing between 1,000 and 3,000 rounds per minute from its six barrels, Yemen was supplied with 52 M167 VADS in 1979 and surprisingly some have been maintained to an operable standard. At least one is still fireable and has been seen in action mounted to the bed of a Land Cruiser. Note the trailer, wheels and ranging system have been dismantled from this version.
The Yemeni Army have also deployed their own unique creations of technicals including HZJ79 Land Cruisers with 106mm M40 recoilless rifles mounted in locally fabricated open-top ACAV-style armoured turrets. The Land Cruiser is by far the most widely employed basis for Yemeni technicals with the Army and Police both operating versions mounting PKMs and DShKs with gun shields.
2: Syrian militia from the Free Syrian Army (FSA) operating the venerable 12.7mm DShK heavy machine gun from the bed of a Toyota Hilux. The DShK's mount has been modified with a locally produced gun shield to provide some protection to the gunner.
The FSA has been supplied with a large number of Hiluxs including some twenty equipped as mobile forward observation vehicles complete with US supplied satellite radios to allow the rebels to call in Coalition air support. The US-backed New Syrian Army, often seen operating alongside Jordanian and Western SOF, is also equipped with brand new Hiluxs but these come supplied with American .50M2HB heavy machine guns.

لواء الفاروق
عمر بن الخطاب
TOYOTA

NON-STANDARD TACTICAL VEHICLES

Special Operations Forces or SOF have used what are colloquially referred to as low-visibility vehicles for many years in an effort to blend in with the local environment in whatever warzone they are operating in. Just as importantly they could also fit within the confines of heavy-transport helicopters such as the MH-53 without needing to be externally sling-loaded beneath the aircraft, a distinct disadvantage with the likes of the HMMWV.

In the 1980s, the American Delta Force and SEAL Team 6 used a range of civilian vehicles including pick-up trucks as low-profile vehicles; however, the first public use of armed technical-style pick-ups was by Army Special Forces, the famous Green Berets. During Operation *Desert Storm* in 1991, the 5th Special Forces Group built their own technicals from Land Cruisers, including a variant mounting an M40 RCL. They featured both factory-detailing stripes and an inverted 'V' stencilled onto the doors to act as a simple Identification-Friend-or-Foe or IFF measure.

These Green Beret technicals were built in-theatre to supplement the unit's desert-modified Humvees, known appropriately enough as 'Dumvees', and mounting both Mk19 automatic grenade launchers (AGLs) and M2 HMGs. Kuwaiti forces operating alongside the Green Berets also employed technicals built from Land Rovers with hastily applied camouflage patterns and machine guns mounted in the rear.

SOF and their employment of armed pick-up trucks really only entered the public imagination however in the aftermath of the 9/11 attacks. When US Army Special Forces first infiltrated into Afghanistan in 2001, their Toyota Tacomas and Hiluxs were known as Non-Standard Tactical Vehicles (NSTVs) or Non-Tacs for short. Initially the Tacoma was favoured simply because that was what was available in US dealerships, as puzzlingly the Hilux was not offered in the US Toyota product line.

These first Non-Tacs benefited from relatively straightforward modifications – rollbars, winches and weapon mounts were added as were racks for radios and Blue Force Trackers (a computerized system that shows the location of all friendly and known enemy forces on a constantly updated screen). The Non-Tacs were favoured as it was easier to source their parts locally, and to repair them, than the modified HMMWVs (now known as Ground Mobility Vehicles or GMVs), and they were also far better suited for the narrow roads in the mountainous east than the wider and heavier HMMWV.

Members of the US Army's 5th Special Forces Group entering Kuwait City during Operation *Desert Storm*, 1991. These commercial FJ-series Land Cruisers were fitted with stowage racks and pedestal mounts for both .50 M2 HMGs and 40mm Mk19 AGLs, stencilled 'V' identification-friend-or-foe markings on the doors and bright orange VS-17 vinyl panels on the roof to identify them to Coalition aircraft overhead. (Photo by Jacques Langevin/Sygma/Sygma via Getty Images)

Perhaps surprisingly, these Non-Tacs were not in fact the first technicals to be deployed by SOF in Afghanistan. Twenty years earlier, Russian Spetsnaz troops had employed captured mujahideen vehicles for similar covert operations. Known to the Spetsnaz as 'trophy vehicles', a range of Toyota Land Cruisers and Iranian-produced Jeep Truck copies (variously called the Simurg or Simoorgh and made by the firm of Sherkat-Sahami), were drafted into use by Russian SOF. These trophy vehicles were armed with a mix of SGM MMGs, DShKs and AGS-17 Palmya AGLs.

A Spetsnaz veteran writing in 2002 explained:

> [the technicals] were loaded into large vehicles with tarpaulin covers such as Soviet-made KRAZ and ZIL trucks. Spetsnaz personnel, clad in local garb, would also hide inside. A convoy of three to four such vehicles accompanied by two to three armored vehicles would leave the base and move to an outside post or another military unit located nearby without attracting much attention, not like a large number of armored vehicles leaving the base.
>
> On the way, the trucks would stop at a place offering limited observation such as a dry gully or a ruined village. Using thick planks, pick-up trucks would be unloaded from the transport vehicles and taken to their destination, while the rest of the convoy would drive on and return to their base later.

The Spetsnaz technicals would then conduct raids and ambushes against mujahideen supply convoys.

A former member of Delta Force explained to the author that the use of pick-ups by American SOF in Afghanistan was also largely about obscuring the identity of the operators just like those used decades earlier by the Spetsnaz. At a demonstration for then Secretary of Defense Donald Rumsfeld in 2001, a Delta Force patrol arrived dressed in traditional Afghan clothing and driving a Toyota Tacoma. Rumsfeld was stunned as, from any distance, the operators looked more like Taliban than American SOF.

Delta brought with them a range of specialist vehicles to Afghanistan including Non-Tacs modified to operate under so-called ‘blackout’ conditions. These trucks were equipped with both standard white light headlights and special infra-red versions. The vehicles’ internal lights and even dashboard lighting were replaced with infra-red lights that could only be seen through night vision goggles, allowing for truly covert night driving.

A Toyota Land Cruiser ‘Non-Tac’, photographed north of the Islamic State capital of Raqqa, being operated by unidentified US SOF in November 2016. The vehicle likely mounts a 40mm Mk47 Stryker AGL under the protective tarp. The Pelican cases carried in the stowage racks are for sensitive or fragile items like sniper rifles, cameras and optics. (Photo by Delil Souleiman/AFP/Getty Images)

UKSF deployed in a range of modified Land Rovers and later Toyota Hiluxs. The SBS were famously seen in white Land Rover Defenders at the siege of the Fort of War in Mazar-e-Sharif. Although the vehicles resembled United Nations or NGO types, they mounted the famous L7A2 GPMG on a swing mount.

UKSF patrols during Operation *Herrick*, the codename for UK operations in Afghanistan, often included a mix of Supacat HMT 400s (adopted as the Jackal by the British Army) or ‘Pink Panther’ 110 Land Rovers, alongside Toyota Hilux and Land Cruiser pick-ups fitted with M2 HMGs, Heckler and Koch GMG AGLs and twin GPMGs. Other nations employed technicals in Afghanistan, including the Czech SOG Special Forces who used armour-plated Hiluxs fitted with a turret ring equipped with both an AGS-17 AGL and a PKM MMG. Armed variants of the Mercedes G-Wagen were deployed by the Dutch, Danes and Norwegian contingents.

During the invasion of Iraq in 2003, Non-Tacs were deployed by both Delta and US Army Special Forces. Delta infiltrated into the western desert in a range of modified six-wheel Pinzgauers and customized Toyota Tacomas. Further north, elements of the 3rd and 10th Special Forces Groups of Task Force Viking were forced to rely largely upon 3rd Group’s GMVs and a hastily purchased selection of Non-Tacs to enter Iraq, as 10th Group were not at the time routinely equipped with GMVs.

The purchase included 206 Land Rover Defenders procured directly from the UK manufacturer and given hurried modifications to allow radios and Blue Force Trackers to be fitted along with weapon mounts to be bolted on. A further 30 Toyota Tacomas, also hastily modified, were also sourced direct from civilian dealerships in Germany.

Another group of unidentified US SOF (although likely Navy SEALs based on the uniforms and equipment) outside of Raqqa, Syria in May 2016. The Land Cruiser has been modified with stowage racks and with a pedestal-mounted 40mm Mk47 Stryker AGL. The militiamen in the lead Toyota are from the Kurdish People's Protection Units or YPG. Accompanying this US SOF vehicle were at least three others – a mix of Land Cruisers and Hiluxs – mounting .50 M2 HMGs and 7.62mm M240B MMGs. (Photo by Delil Souleiman/AFP/Getty Images)

Unfortunately, many of these vehicles were late in arriving due to the scant availability of cargo aircraft and, in the early stages of the campaign, the Green Berets used transport loaned from their Kurdish allies. Even the Task Force Viking commander had to rely upon a locally procured Land Cruiser complete with blue satin seat covers!

More recently, US, British and French SOF deployed to Syria have been photographed driving Land Cruiser- and Hilux-based Non-Tacs. Similarly, in Libya UKSF have been seen operating recent model Hilux and Land Cruiser trucks mounting M2 QCB HMGs and their distinctive Heckler and Koch GMG AGLs. UKSF were also reportedly seen deployed along the Jordanian border in 2016 using the Jordanian Fox or Al-Thalab, a Land Cruiser 79-based long-range patrol vehicle.

Procurement of technical-style SOF vehicles is increasing. French SOF have purchased the Nissan ALTV (ACMAT Light Tactical Vehicle), and the Belgian Army Special Forces Group have procured the Toyota Land Cruiser-based Jankel Fox Rapid Reaction Vehicle. Even regular armies are employing technicals – the Mexican Army now uses a digital camouflage-clad Chevrolet Cheyenne complete with Mk19 automatic grenade launcher and the Russians have experimented with motorized light infantry battalions built around the UAZ Patriot technical. The French Army has also recently purchased some 3,700 Renault VLTP-NV 4WD tactical vehicles for their regular forces, replacing the Peugeot P4.

A Toyota Hilux operated by unidentified US SOF, possibly a Green Beret ODA (Operational Detachment Alpha), outside Raqqa, May 2016. The Hilux looks remarkably unaltered apart from the satellite communications (SATCOM) antennae on the roof and the pedestal mount .50 M2 QCB HMG which appears to mount the SureFire HellFighter Heavy Gun Spotlight offering both infrared and white light and an EOTech Holographic Weapon Sight. In the background is another SOF vehicle – which appears to carry US Navy SEALs again, based on the uniforms and plate carriers worn – equipped with a 40mm Mk47 AGL. (Photo by Delil Souleiman/AFP/Getty Images)

As of 2015, SOCOM, the parent command for the majority of US SOF including the Navy SEALs and Army Special Forces, was fielding a reported 402 Non-Tacs across its various units. Numbers from other commands, such as Joint Special Operations Command (JSOC) – who undoubtedly field significant quantities of these vehicles – were not included in this total. They are termed Non-Standard Commercial Vehicles or NSCVs in the current US military type-classifications. Intriguingly, the NSCV title appears to relate only to ballistically protected models, whilst the soft-skin versions are known explicitly as Unarmoured Non-Standard Commercial Vehicles or UANSCVs.

The last publicly available details of a purchase by US SOF was for 556 NSCVs, some 396 armoured and 160 unarmoured, split between Toyota Hilux, Land Cruiser and Ford Ranger models, although the majority are reported to be Land Cruisers and this is certainly supported by footage of such vehicles in Syria and northern Iraq.

Each of these vehicles will be modified to accept SOCOM command, control, communications, computer, intelligence, surveillance, and reconnaissance (C4ISR) systems along with ‘blackout’ headlights, improved suspensions and reinforced frames. The armoured versions will feature covert armour that will be rated to withstand heavy machine-gun fire. Along with being internally air portable by the MH-47 Chinook helicopter, the NSCVs offer increased payload capacity, even in the armoured versions. For instance, the armoured Hilux NSCV offers 2,200 pounds of payload, whilst its unarmoured version offers only 300 pounds more.

SOCOM is also actively investigating new methods of providing ballistic protection. Traditionally, as we have seen, such vehicles have been armoured using appliqué plates. As SOCOM itself states: ‘This method can lead to seams and joints where ballistic coverage may be compromised. It can also add difficulty to making the

vehicle look like its indigenous counterparts.' Other enhancements currently on the table include noise-cancelling engines and even 3D camouflage for the next generation of NSCV.

One of the newest and most exciting designs purchased by SOCOM has been the Navistar Special Operations Tactical Vehicle-B or SOTV-B. Along with being covertly armoured and designed to withstand the rigours of desert and mountain warfare, the SOTV-B offers the unique capability of what the manufacturer terms 'blendability'. A series of panels can be swapped out on the SOTV-B allowing it to mimic most popular brands of pick-up truck, making it perfect for 'mission specific indigenous operating environments'. Simply swap out the panels to match whatever the enemy is using!

Such innovations will doubtless see the technical continue to be favoured by SOF for deniable missions in the world's conflict zones. For their opponents, the technical is a symbol both of their ingenuity and mobility, enabling the use of deadly swarm tactics that mirror the Ghazzi of the SPLA in the Sahara all those years ago. For the insurgent, the technical fulfils the role of reconnaissance, troop transport and portable artillery, all in one cheap and easy-to-maintain vehicle. Consequently, it is difficult to see how its use on today's asymmetric battlefields will diminish as it continues to serve as the perfect '21st century cavalry' for the modern insurgent.

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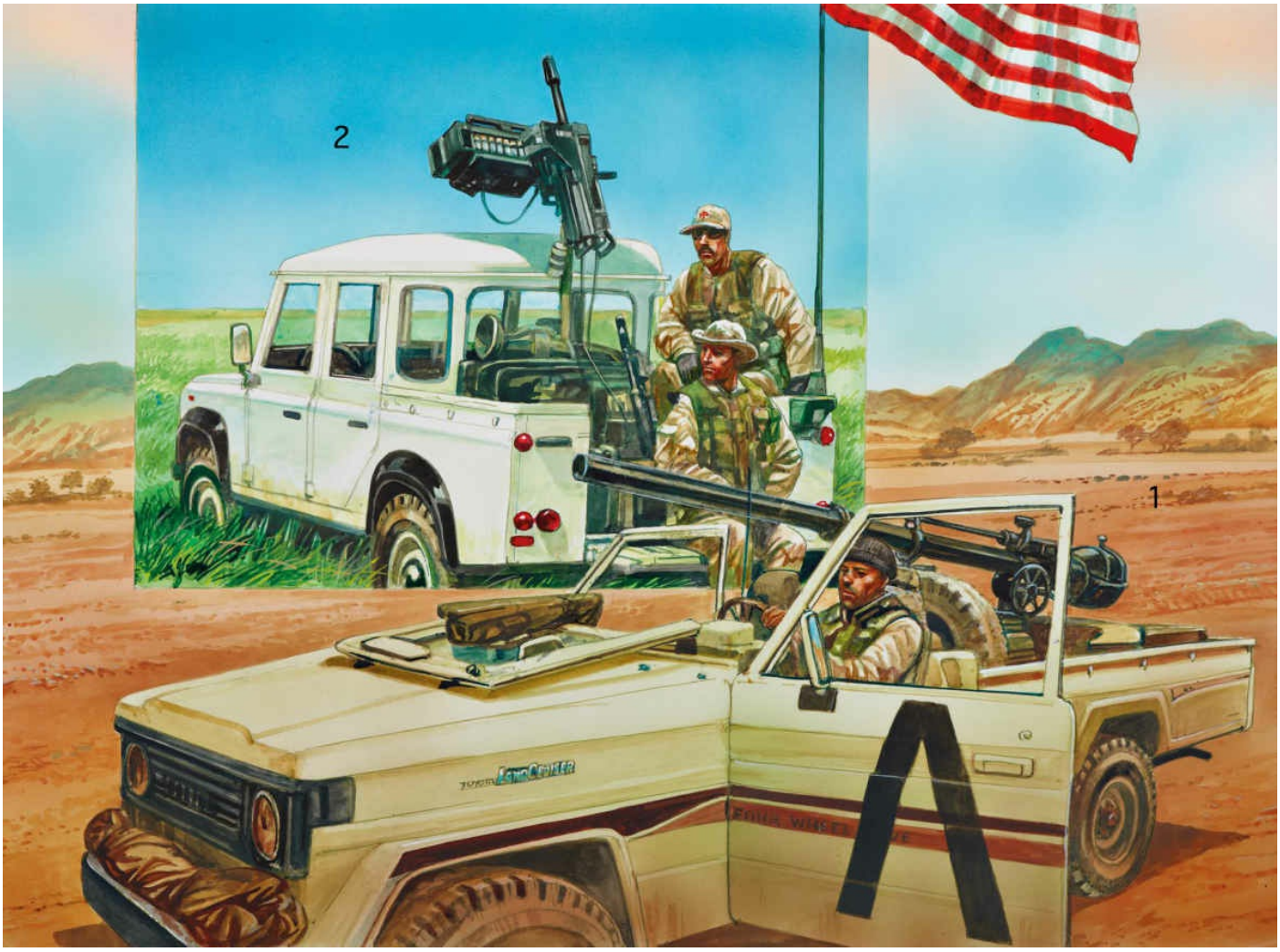
1: Operational Detachment Alphas (ODAs) from the 5th Special Forces Group, the iconic Green Berets, were embedded with Arab Coalition units during the 1991 Operation *Desert Storm* to evict Iraqi forces from Kuwait. Each ODA was equipped with a pair of desert modified HMMWVs known as Dumvees and a number of Toyota Land Cruiser 75s from a Japanese donation. They also used a number of unarmed Ford F150s as medical vehicles.
At least one of these Land Cruisers was rather extensively modified to allow the mounting of a 106mm M40 recoilless rifle. As can be seen, the vehicle itself was largely factory-spec apart from the addition of a stencilled V-device on the driver and passenger side doors that acted as an identification-friend-or-foe measure (a common practice between all Coalition vehicles due to the bewildering number of types and variants in operation, often at close quarters – the Iraqis also operated some of the same vehicles), and the rear mounted 106mm, the heaviest support weapon operated by the Green Berets at the time.
2: A commercially acquired Land Rover deployed by members of the US Army's 10th Special Forces Group (Airborne) in northern Iraq in April 2003, during Operation *Iraqi Freedom*. The vehicle in question appears to be based around a civilian Land Rover Defender 110 Double Cab Pick Up. Minimal modifications seem to have been made apart from the addition of a military spec antennae capable of use with various radio systems, and used to fly the Stars and Stripes (possibly again as a measure against fratricide from the air) and a pedestal mounted 40mm Mk19 automatic grenade launcher. Other Defenders operated by Task Force Viking mounted .50 M2 heavy machine guns and 7.62x51mm M240G medium machine guns.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1: This vehicle is based on sightings of a number of modified Toyota Hilux trucks seen operating in Libya during 2015 and 2016, manned by unidentified Western SOF. These dual-cab Hiluxs are subtly modified with self-recovery winches, camouflage nets sometimes seen affixed to bonnets (hoods) and a custom WMIK-style ‘cage’ in the rear (and nearly always covered by a canvas tilt to maintain a more natural look to the vehicle) that holds all manner of supplies and ammunition.
At the top of this cage is a ring mount from which both the Quick Change Barrel (QCB) variant of the venerable .50 M2 heavy machine gun or the 40mm Heckler and Koch GMG or Grenade Machine Gun are fitted, both equipped with Trijicon ACOG optics. These vehicles are believed to be operated by United Kingdom Special Forces units.
2: Along with a number of Toyota Land Cruisers, unidentified Coalition SOF have been seen operating Toyota Hiluxs in Iraq and Syria. This illustration is based upon a Hilux seemingly driven by a US Army Special Forces Operational Detachment Alpha (ODA) in northern Syria in 2016, operating alongside Kurdish YPG militia. The vehicle retains its commercial colour but has been fitted with a permanent satellite communications (SATCOM) antennae on the roof, stowage racks in the rear, roll-bar and a pedestal mount fitted with a 7.62x51mm M240L with ELCAN Specter variable optic and infrared illuminator.

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HILUX
TOYOTA
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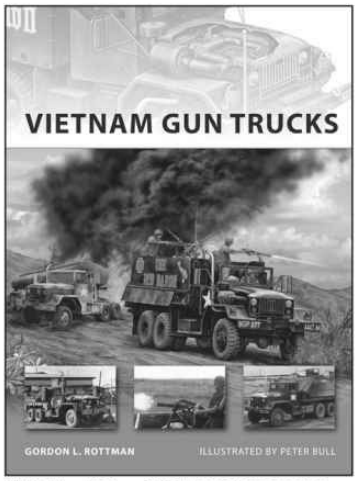

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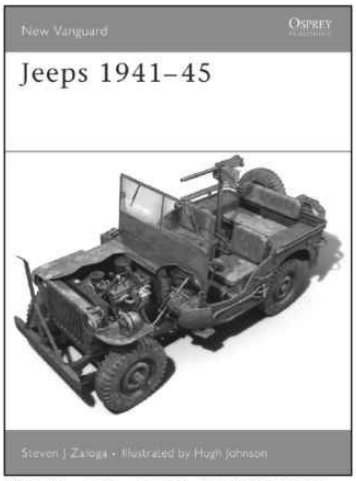

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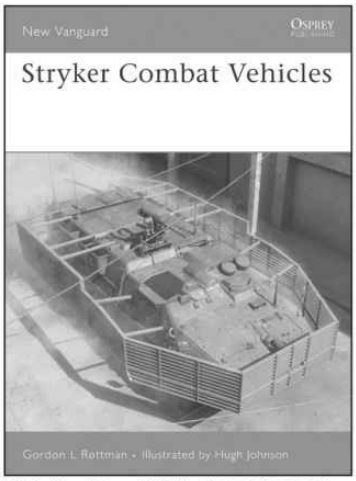

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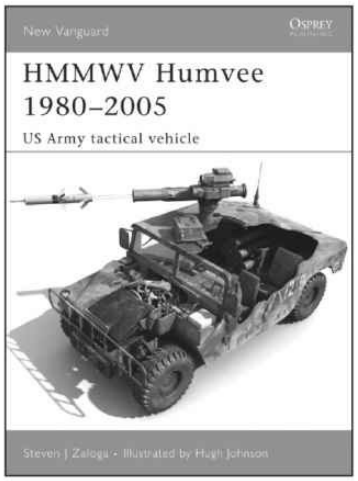

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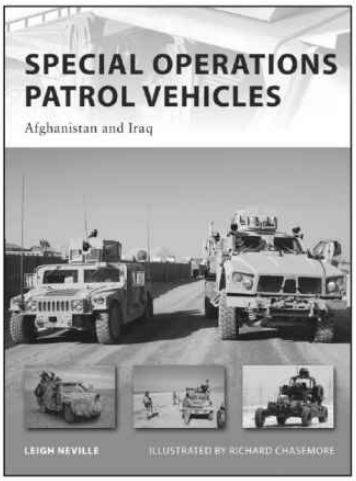

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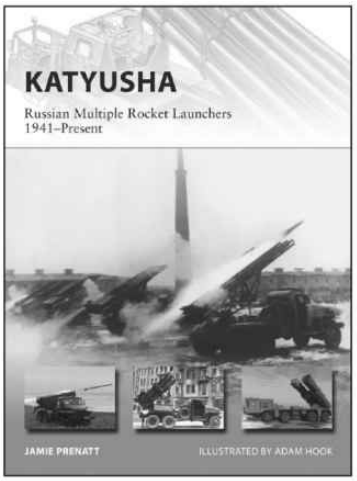

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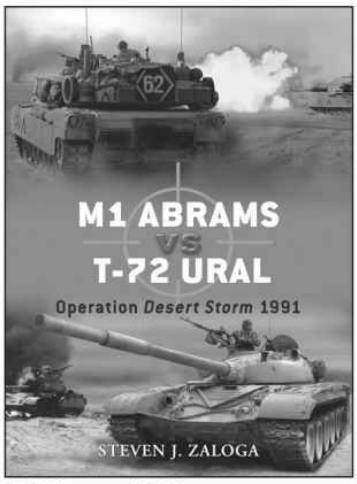

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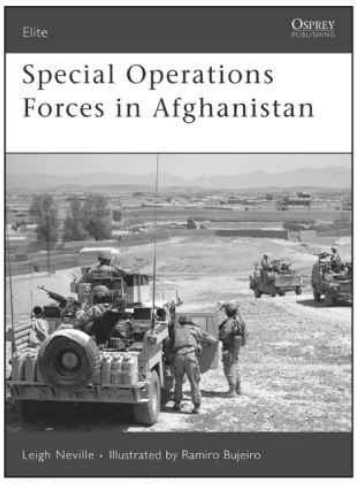

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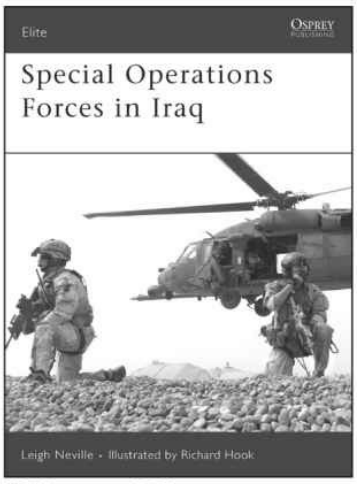

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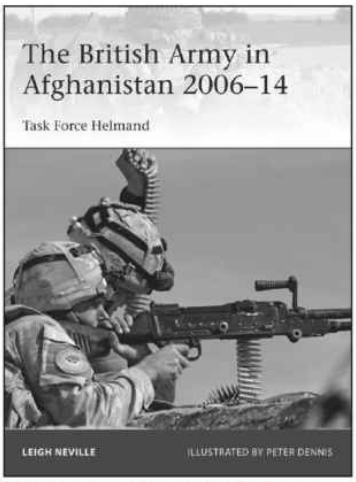

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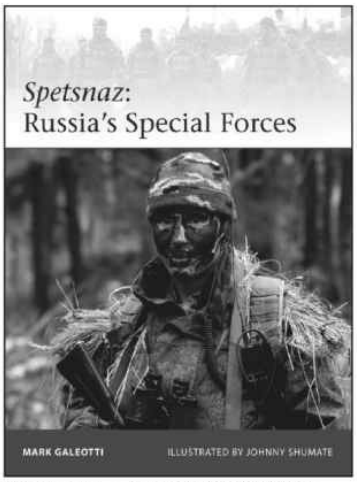

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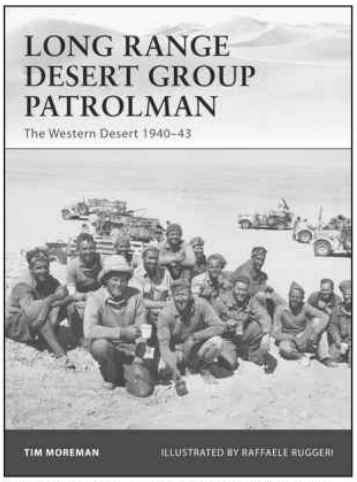

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COVER IMAGE

A Chinese-made Grand Hiland pick-up truck in Sirte, Libya. (Photo by John Cantlie/Getty Images)

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